

Audubon

SEPTEMBER-OCTOBER 1957

Magazine

FIFTY CENTS

PUBLISHED BY THE NATIONAL AUDUBON SOCIETY



WOLF

See page 218



Upon his retirement from the American Museum of Natural History in New York, **DR. JAMES P. CHAPIN**, for many years one of our leading ornithologists, and Past President of the American Ornithologists' Union, and his wife (formerly assistant curator of birds in the Carnegie Museum) went to the Belgian Congo to continue studying birds of this region. His four-volume monograph on birds of the Belgian Congo is a model for works of this kind. Dr. Chapin is pictured with Kaporali, a pigmy bird-trapper, at Tshibati Farm, Kuri District.

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James P. Chapin

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Volume 59, Number 5, Formerly BIRD-LORE

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Letters

About Bob Allen

Will you please thank Roger Peterson for his recent "Bird's-Eye View" of our friend Bob Allen, author of "On the Trail of Vanishing Birds"? Not that we can rightly say we know him, since our acquaintance was limited to the brief five weeks he spent in North Platte, Nebraska, while "on the trail" of the migrating whooping cranes.

During this phase of his campaign to save the cranes from extinction Bob spent the daylight hours exploring the Platte Valley river bottom, via plane, Plymouth, and his own two feet. In spite of many hours afield he found time to establish contact with the local press (publicity which was to pay off later), and with local amateur ornithologists, and contributed a number of useful records to our spring migration report. Also, he attended several evening meetings of our bird club, sessions we spent mainly in plying him with questions and listening to the informal recounting of his many adventures with birds. On one foggy Sunday morning, four of us met at 5:30 for coffee, then made the rounds of good birding areas—just for the fun of it!

The rest is a matter of record, how Bob sighted five of the cranes and photographed them from the air for *Audubon Magazine*, then followed them north into Canada where he continued his efforts in their behalf.

We like to think that a little of his wonderful enthusiasm brushed off on those of us who met him so briefly during his Nebraska sojourn.

Mrs. CARL N. COLLISTER
State Bird Chairman
Colorado Federation of Garden Clubs
Longmont, Colorado

Aggressiveness of Male Cape May Warbler

It was on May 15, 1957 that a male Cape May warbler, in brilliant spring plumage began to dominate a 30-foot section of our fence border here in Racine, Wisconsin. For five days, ending May 19, he reigned over this chosen feeding territory. He was a belligerent fellow, unusually so, I thought, for a warbler apparently not in his breeding territory. He roamed continuously back and forth over the shrub border these five days, his favorite area being in two barberry bushes (in bloom) where he peered into the pendulous blossoms for his fare. He chased away any feathered

intruder in the area. From the kitchen window 15 feet away, I watched him put to flight a least flycatcher, a Nashville warbler, a golden-winged warbler, a Tennessee warbler, and a catbird. The Tennessee warbler he was particularly vigorous in ejecting. At one time he even made a pass at my head as I walked by. The feathers at the back of his head would raise, at the time of these attacks, with the indignation one usually finds in a parent bird defending its nest.

All in all he was an interesting little fellow, and I was sorry to see him go. I wonder if this is standard behavior for the Cape May warbler?

LESTER ERBE

Racine, Wisconsin

Comments

As most of our readers, including Mr. Erbe, know, the Cape May warbler generally nests in the spruce and fir country from New England and northern New York State across the northern United States and into Canada.

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Dr. J. J. Murray of Lexington, Kentucky, in his bird notes from West Virginia, has written that the Cape May warbler in migration is more active and restless in its feeding than most warblers, and that it is very aggressive in its attitude toward other warblers that try to share in its feeding places. Richard C. Harlow, a well-known oologist, in his notes on the Cape May warbler which he sent to Arthur Cleveland Bent, said that he considered the little, male Cape May warbler as "the tiger of the North Woods in defending his territory," and that he attacks all birds that come near his nest, including the olive-backed thrush.

Perhaps the notes of these experi-

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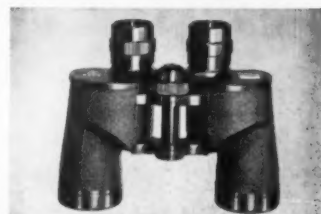
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enced observers will help to explain the interesting experience of Mr. Erbe, and to suggest that the aggressive behavior of the Cape May warbler either in migration, or at the nest, seems to be "in character."—The Editor.

Courage of Brown Towhees

The article, "The Brown Towhee," by Frank F. Gander, which appeared in the May-June 1957 issue of *Audubon Magazine*, proves that a prosaic bird can be interesting.

I regard brown towhees as garden pets because they are so tame. Occasionally, when our kitchen windows are open, a brown towhee will hop in and eat the scraps of dogfood remaining in our collie's dish. The towhee's courage is remarkable. Last month two brown towhees nesting in our ivy attacked a 2½-foot-long garter snake, which was about five feet from their nest. Their sharp cries of alarm attracted our collie, which joined them and helped to drive away the snake. After being pecked by the birds and trampled by the dog, the snake retreated to a vacant lot and did not return to our towhees' territory.

MRS. VIOLET HOMER
Oakland, California

Saw-whet Owl in Great Smokies

Yesterday (May 29, 1957), I climbed Mount LeConte and saw at close range a saw-whet owl, apparently the first sight record for the Great Smoky Mountains National Park, although they have been heard frequently in the past.

JAMES T. TANNER
The University of Tennessee
Knoxville, Tennessee

Comment

Dr. Tanner's article, "Adventures for Bird-watchers in the Great Smoky Mountains," (*Audubon Magazine*, May-June 1957 issue) brought some complimentary remarks from a number of our readers. So much interest has been shown in the natural history of the

Great Smokies that we hope to publish an article about the wildflowers of the park in a future issue of *Audubon Magazine*.—The Editor.

Likes Book Ads

I look forward to the arrival of each issue of *Audubon Magazine*, especially the advertisements of the new books that it contains. I find the reading of *Audubon Magazine* to be very uplifting and the next best thing to exploring nature one's self. Certainly would hate to be without it.

MRS. FRED F. DECARLI
Stafford Springs, Connecticut

Bird Storing Acorns

Enclosed is a photograph of a rotted oak limb which apparently has had



holes picked by woodpeckers and, according to the best information that I can obtain from the party who supplied me with this limb, the blue jays then came along and plugged the holes with acorns.

JASON LEE
Salem, Oregon

Comment

This is probably the work of the acorn woodpecker, or California woodpecker, as it is sometimes called. One of its most interesting habits is that of drilling holes, slightly larger than acorns, in the limbs and trunks of trees, where it stores thousands of acorns. Although jays will store acorns, they usually hide them in leaves or underground. We are rather sure that if someone saw a jay at the limb photographed, that it was not storing acorns but was probably trying to pick out one of the acorns which the acorn woodpecker had already put there.—The Editor.



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The Community Ecologist*

By F. R. Fosberg

THE community ecologist is, so far as I am aware, a phenomenon that does not yet exist. However, it is clear that there is a place and a need for an official in a community government whose function is to foresee the ecological consequences of all projects and activities sponsored or sanctioned by the community.

Some of my scientific colleagues may be disturbed that I not only write about a phenomenon that does not exist but that I give it a name, possibly adding to the already appalling confusion in ecological terminology. However, a phenomenon, even a hypothetical one, must have a name if it is to be discussed easily, and the term *community ecologist* clearly fits what I aim to describe. I hope that any resulting confusion may be cleared up by the time the article is finished.

The excuse for describing such a government office is that I think that it surely will come into being in the near future and that it is highly desirable that it should. Talking about it may hasten the event. If the need for this type of ecologist were recognized, men with a rather special (not specialized) background would be required, and in considerable numbers. It is conceivable that teachers of ecology and directors of graduate study might accept the idea presented here. If so they might well do both their students and society a service by helping promising young ecology students to acquire an adequate background for this sort of work. An advance formulation of a probable future profession may thus be of value in at least two ways.

The function of the community ecologist, as well as some of his characteristics, may become apparent as the discussion progresses. Also some of the responsibilities of the ecological profession to society as a whole may be brought

out. These cannot be too often reiterated.

It is probable that few of even the least biologically trained of us have failed to see instances where public (or private) projects have brought about results that were quite unexpected and often disconcerting. Whole chains of such consequences have been touched off, sometimes by seemingly insignificant or unrelated acts.

The encroachment of salt in the groundwater in the region of Miami, Florida, after drainage of some of the Everglades region for agriculture is a well-known example. The plague of rodents in the Buena Vista Lake bed in California some years ago resulted from unrestricted poisoning of coyotes.

Some years ago the agriculture department of a great American university carried out experiments involving heavy fertilization on a plot of university land. This field drained into a beautiful lake fronting on the campus and the city. The excess fertilizer entering the lake brought about a sudden "bloom" of algae, accompanied by foul odors. The city sanitary authorities then decided to copper sulfate the lake water to destroy the algae. This proposal caused consternation among the limnologists of the university who had long-term observation and studies in progress on the ecological features of the lake. I have no information on how the difficulty was resolved.

It is well-known that industrial pollution has ruined both recreational and commercial fisheries in many rivers in the eastern United States. Some of these same streams are the water supplies for great cities. Equally it is a matter of record that the greater portion of Pacific salmon spawning grounds have been rendered inaccessible to fish by hydroelectric dam construction, greatly reducing the commercial salmon resources, as well as the recreation of salmon fishing.

During the first quarter of this century melon culture was a source

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of great prosperity in the Turlock Irrigation District in Central California. The production of high-quality melons in that area depended on a relatively high water table and "sub-irrigation" or a capillary water supply from below. Demands from a small group of peach-orchard interests caused the irrigation district authorities to install deep drainage pumps and ditches to lower the water table. This benefited the peach growers but forced the melon growers to surface-irrigate their melons. The quality of the melons then declined and melon raising dropped to the status of a relatively minor and not very profitable activity in the area, certainly not the aim of the authorities.

The above are only a few specific examples of confusion and unexpected consequences resulting from actions of public authorities or from projects permitted by such authorities. They could be multiplied by thousands by searching the records or by examining the countryside.

More serious, if less easy to pin to a specific cause, are symptoms of economic maladjustment and of ecological errors resulting from poor civic planning. Such symptoms are epidemics, poverty, "ghost towns," localized unemployment, falling water tables, "smog," dust-storms, silting of reservoirs and estuaries, beach erosion, floods, outbreaks or increase of noxious insects and rodents, and many ills that are by many thought of as simply "acts of God." Actually, very few such things are unavoidable. Most result from failure to evaluate properly the long-term effects of policies, projects, and enterprises. The development of one resource may in all probability have effects, either favorable or unfavorable, on the status of other resources.

It is not a common trait of people keenly interested in one enterprise to be deeply concerned about its relation to others unless financial or political consequences are obvious. The commercial promoter or developer rather than looking for unfavorable features of his project is often quite resentful or scornful toward anyone pointing out such things. He may even make active efforts to conceal bad effects. The bureaucratic promoter of a public

activity may often be either enthusiastic about his work or an "empire builder." In either case he is not likely to go out of his way to look for obstacles or for possibilities that might cast doubt on the wisdom of what he is doing. Recent history is full of examples where such officials have fought bitterly for projects that were clearly not in the public interest. If the existence of such confusion and such attitudes is admitted it is clear that a means for study of the entire context of public interest is needed, as well as a means for applying the results of such study to the pertinent problems.

The great majority of such affairs, on any governmental level, concern the environment of the community, taken in a broad sense. This includes, in addition to man's immediate physical environment, the general environment of his agriculture and fisheries, which yield his food; the earth, which yields his fuel, minerals, and water supply, and the often distant sources of his raw materials and energy. It further includes the factors of beauty and comfort that elevate life from mere helpless existence to something rewarding and worth while.

These environmental matters are properly the concerns of the science of ecology. Ecologists, if broadly enough trained, should be the group most able to deal adequately with these problems. A common defini-

ABOUT THE AUTHOR

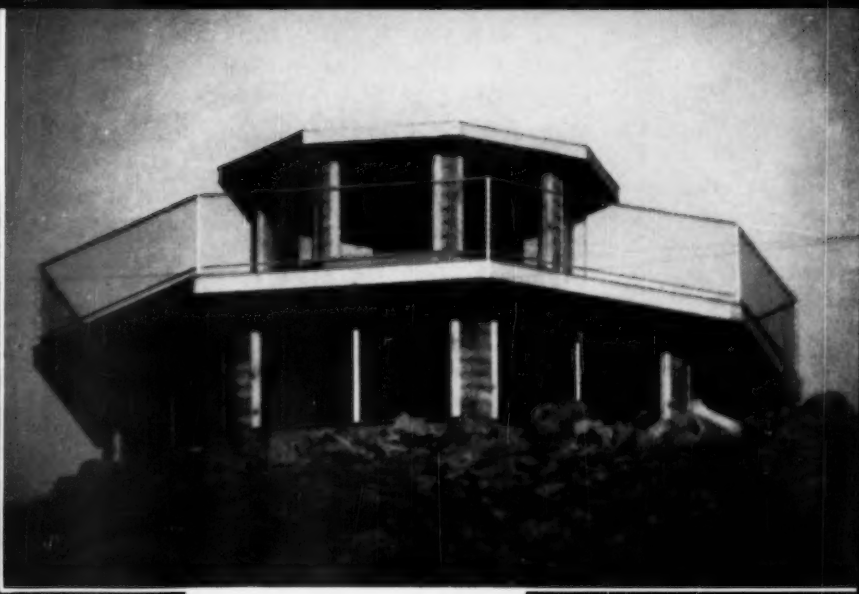
Dr. F. R. Fosberg, author of *"The Community Ecologist,"* worked for many years in systematic botany, but "had inclinations toward ecology." He has worked in the United States Department of Agriculture, Foreign Economic Administration, in several universities, and has, since 1951, been with the U. S. Geological Survey. He has done field work in various parts of the world, especially Pacific islands and Latin America, and was recently made a member of the UNESCO Advisory Committee on Humid Tropics Research. Dr. Fosberg received his Ph.D. degree at the University of Pennsylvania in 1937. He is "much interested in county planning, especially for parks and recreation, in Fairfax County, Virginia, and in the Potomac Valley."—THE EDITOR

tion of ecology is "the study of the interrelationships between organisms and their environments." Man is the most important of these organisms and human ecology, under various names, is becoming more and more a powerful branch of ecology. Therefore, at every governmental level where decisions involving these environmental relations are made there would seem to be not only a place for, but an acute need for ecologists. In the local community—town, city, or county—in the state, regional, and national governments and authorities, indeed, even in international or intergovernmental organizations, there is a function waiting for public or community ecologists.

It may be objected that we already have public planning agencies in many communities and that they are merely ecological groups under another name. Actually, though this would certainly be a desirable state of affairs, it is seldom really the case. Public planners are often engineers, economists, landscape architects, or most often, politicians, but seldom ecologists. And it is not likely that this situation will change soon.

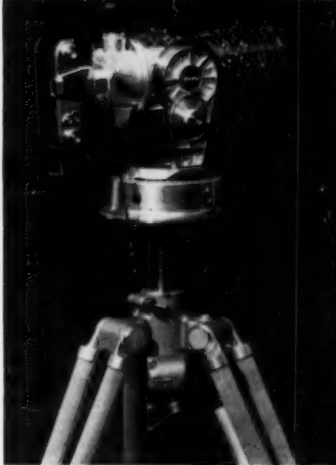
Rather than try to break into the established field of public planning it might be best to introduce something entirely new (a least in America)—the *community ecologist* as a separate and autonomous office within the community government. It might be well to give him no specific duties except to become thoroughly familiar with every aspect of the community environment, to develop an understanding of its interrelationships and functioning, and to consider critically every activity and decision of each of the departments and agencies of the government. These should be studied in terms of their probable or possible effects on all other aspects of the community life. Written opinions should be submitted directly to the responsible head or executive. The ecologist should probably not have veto power but his opinions should be made matters of public record. His tenure of office should not, of course, be subject to political pressures. His position should be reasonably secure and he should expect

Continued on Page 209



Anyone can take telephoto pictures, like the one above, with Questar. The fine wire mesh of the guard-rail panels, although clear on the print, have not survived the printed dots of the half-tone reproduction here, as a magnifying glass will show.

This is the Bevington Observation Tower on the continental divide above Monarch Pass, Colorado, altitude 12,300 feet. A late afternoon photograph, Eastman Panatomic Film, 1/100 second at F:12.7 on Weston meter. Distance 2500 feet, normal focal length 42.4 inches. All camera couplings now include device to extend focal length to 200 inches with eyepiece projection, and give visual powers of some 300X with De Luxe Model. At right is Hexacon single-lens reflex camera close-coupled to Questar.



TABLETOP TO TIMBERLINE WITH THE INCOMPARABLE QUESTAR

"I did not like your last Audubon ad," writes Questar owner Frederick W. "What's needed is some graphic way of relating the scene as the eye sees it and as Questar sees it. Just saying this is a blue heron or a pileated woodpecker at over 200 feet doesn't do that. Let's have a scene like some you took in the Rockies last summer—the ones where you have to use a magnifying glass to see the subject in the regular camera shot, while Questar's view affords the anatomical detail. All field workers want greater and greater power, and all serious birdwatchers would like to stop stalking and sit behind some unbelievable set of optical surfaces that bring the whole world to them without the necessity of moving anything except a finger now and then!"

The above pictures are a pair of those Fred W. refers to, taken on our trip last year. We took along a De Luxe Questar, the model with all the built-in power changes and smooth controls that make its use from tabletops so rewarding. We also wanted to try out the Linhof Tripod. We carried the telescope attached to tripod across the back seat of our car without mishap, and it withstood some dust storms in the field, too.

We wanted to be able to say that anyone can take pictures like these, so we bought film at local drugstores and had them de-

veloped, with no special care, at the photo-shop back home. We always tried to shoot across canyons like this so it would be obvious that no fakery was possible.

For practical reasons we do not often try to photograph things at the highest powers we use visually. The normal shot at left was made with 2-inch camera lens; the telephoto view, at prime focus of Questar's 42-inch basic focal length. Questar is the sharpest 3½ foot telephoto lens so far made, and so perfect it is that no lens of like diameter can be made of greater resolving power.

Telescopes of this degree of perfection are a very special class of instrument—the astronomical telescope. They are designed to do one thing very well—reach out and bring the image of some distant object to you with the utmost clarity, at the highest powers the air through which we see will allow. At the 6 or 8X of your binoculars, or the 30X of your spotting 'scope, adequate definition, or resolving power of lens, may be achieved by mass production methods. But when we ask 80X or 160X or even more from a larger telescope, its optics have to be individual works of art. Each must be just so, a gem of flawless workmanship. We sometimes fuss around for days to get one Questar just exactly right—but when it is—man! We

have a little jewel. Its prime image, which we shall examine with various sizes of those little magnifying glasses known as eyepieces, must be so flawless that it will stand several hundred diameters of magnification before breaking down. Actually, we use more practical powers of 40, 80 and 160 with Questar, depending on the available light and the "seeing" of the air—its tranquillity.

But imagine, if you have never seen it, what the power of 160X can mean to you in bringing objects near! It enables you to sit in the center of a circle 2 miles in diameter where nothing is apparently more distant than 33 feet. Things that appear but a yard from you are actually 480 feet away. This indeed is extension of personal power!

So, if you, like ourselves and Mr. W., like to enjoy the unsuspected beauty of so many distant things, our literature will describe the world's most versatile telescope. The De Luxe Questar is priced at \$995, the Linhof Tripod at \$169.50 (with Pan Head add \$38.50), the Auxiliary Base Plate for attaching Telescope to Tripod, \$15. Hexacon Camera with Couplings, \$134.50.

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Illustrations
by the author.

Advanced "Birdsmanship"

IN the last issue of *Audubon Magazine* I turned over my column to a dissertation on "Birdsmanship." To those readers unacquainted with Stephen Potter's "Lifemanship" and "Gamesmanship" it must be explained that "Birdsmanship" is the art of establishing one's dominance in the ornithological pecking order. By a few simple tricks you can hold your own against all but the most highly placed experts.

The original version of this paper by Bruce Campbell appeared in *Bird Notes** (*Audubon Magazine's* counterpart in Britain) and is here translated from the Olde English for an American audience by Joseph Hickey and myself.

Identification: The first task of the birdsman in the field is to show his superior skill in bird recognition, and while his opportunities will to some extent depend on the cooperation of the birds themselves, it is possible to engineer certain favorable situations in advance.

The rival should be trapped early into offering to show the party a

particular species, e.g., a curlew sandpiper. Then, when his attention is held elsewhere, remark casually but briskly: "There's your curlew—with that pack of red-backs. Oh, sorry, I'm afraid they're out of sight now." This is a development of the Binocular Play already described, but note the use of "your"

to convey that you have had to find his bird for him. If by any chance he doesn't know the birdsmanish omission of the "sandpiper," he will be even further outplayed; in fact this species is the ideal birdsman's bird.

In the case of a not readily identifiable bird that stays put, the birdsman must combine patience and a sense of timing to an unusual degree, for, after a prolonged and silent inspection, he *must* be the first to ask, "Well, what do you think?"—which gives him the chance of trapping an unwary diagnosis from his rival. Should this agree with his own private opinion, he jumps in with: "Of course, but the superciliary stripe (or absence of superciliary stripe) was a bit unexpected, wasn't it?"

If he disagrees, then he must use an enigmatic smile, directed to the most receptive member of the party, and make some more entries in his field notebook. This stalling enables him to come out on top whether his rival's identification is confirmed by others, in which case he must convey that he knew all the time but was just giving the rest a chance; or whether it isn't, which puts him at an obvious advantage, clinched by such moral remarks as "I never think it's safe to diagnose at this



* Published quarterly by the Royal Society for the Protection of Birds, 25 Eccleston Square, London, S.W. 1, England.—The Editor

time of year unless one can see the wing-pattern." The phrase "at this time of year" should be noted, as it indicates easy familiarity with all phases of the bird's plumage.

The true birdsman may at all times carry his Field Guide in a secret recess of his jacket. This is never examined in public, and the impression should always be left that he wore the book out years ago—in the *first edition*, of course.

List-chasing: The principles underlying previous advice also rule in this important aspect of field birdsmanship: find out your potential rival's line, and play the opposite for all you're worth.

Thus, if he is an acknowledged list-chaser, you must use the scientific gambit, "After all, it's only the common birds that really count, isn't it?" and continually hold up the party by calling their attention to robins or field sparrows sitting in huddled attitudes on the vegetation. If after five minute's observation the robin gives a perfunctory peck at its plumage, you murmur, "Ah, an intention movement!" implying familiarity with the writings of Lorenz and Lack. After making profuse notes, you add, to the air in general, "I must write to Griscom about this." A slight hesitation before the Griscom should make it clear that, among your real associates, you would say "Ludlow." (In certain regions, substitution of other names here is quite permissible: Alden Miller in California, George Lowery in Louisiana, Robert Cushman Murphy in New York, and Alexander Wetmore in the District of Columbia. Ernst Mayr is another "O.K. name" useful on either side of the Atlantic.)

On the other hand, if your rival is a serious ornithologist, you follow the line already suggested in Binocular Play (2), and cry, "I'm frankly pot-hunting today; leave the sparrows alone for once, old chap, and come and see some real birds! *Allons! En avant!*" By incessant remarks you should manage to scare away any of the commoner species at which he may wish to look, and if you can keep up your flow, and have the luck to see one or two scarce birds, you should manage to convince the party that your rival is an introverted spoil-sport, living in an ivory tower.

Field Investigations: The birdsman should not let himself in for any real field studies until he has worked his passage in Identifications and List-chasing. By then he should know what he is up to, and can take part in, for example, a fall census of migrating hawks with good prospects of enhancing his reputation in return for the minimum expenditure of energy. Indeed, his goal should be never to take his hands out of his pockets either to use his glasses (strung apparently purposefully round his neck) or to make notes. This will be more easily achieved, if the observers on either side of him are reasonably painstaking, by playing on their anxieties with such leads as, "You got that rough-leg, I hope? It was definitely off my line;" or, "red-tails coming over: 1, 2, 3, 4—oh, awfully sorry, I'm poaching; they're yours now."

Christmas Bird Counts: Christmas Counts taken by large groups offer special opportunities when individual parties have their own routes of coverage. Care should be taken to traverse the route of one's rival as often as possible on days before the Count. Surreptitiously, of course. One should ascertain the exact schedule one's rival hopes to follow on the Count itself, so that systematic invasion of his territory may then be carried out at the best hours, "staked-out" rarities properly recorded, and measures effectively taken (a) to scare the birds out of the country, or (b) to induce in them responses customarily accorded to goshawks, weasels, and boys with firecrackers. Special attention to the best places on a rival's route, given approximately 45 minutes before his expected arrival, will usually produce the desired results; although a dollar's worth of roofing nails scattered in his usual parking places will often have an equally disruptive effect. Subsequent reporting of Christmas rarities should, of course, be made with becoming modesty: "By the way, George, did you get that hawk owl down at the bridge?"

Points along these lines are practically guaranteed the birdsman who succeeds in getting himself appointed leader of a Clean-up Party which is assigned no particular route on the Christmas Count itself. The effects, however, are so devastating that this can only be worked once.

Continued on Page 226



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eyes of an owl

One of England's finest photographers goes to Iceland on a trip that he humorously calls an

Icelandic Wild-geese Chase

All photographs by the author.

By George K. Yeates

SECRETLY, deep within us, we all have our ambitions—our little Everests, as Sir John Hunt has called them. For more than 20 years, I had nurtured a strong desire to follow north to their Icelandic nesting-grounds the pink-footed geese which are the great glory of British mudflats and estuaries. During the winter we in Britain have almost a monopoly of this goose, for, except for a flock of about 3,000 which regularly winter in North Germany, all the pink-feet in the world frequent the great mudflats of the Wash, the Humber, and the Solway and similar estuaries in Scotland. They are with us from late Septem-

ber until early April, every morning and evening making against the dawn and sunset those romantic flying echelons in which the great bird-painters have delighted, and which have made the appeal of the wild geese so strong, even to those who have had little experience with them in the wild.

With the coming of spring, however, they, like so many geese, retire north to nest—into the wilderness of the Arctic, on cliffs in remote fjords of East Greenland, or high above Spitsbergen valleys, or in the lava-gorges and oases in the desert of Central Iceland. In this locality they have, since the war, thanks to the expeditions of Mr. Peter Scott and Dr. Finnur Gudmundsson, been

closely studied—so much so that it is true to say that although the pink-footed goose was in 1950 one of the world's birds about which we knew very little, today it is a species about which we know as much as any.

Iceland* is amongst the most misunderstood of countries. From its name many have thought it a land of Eskimos and polar bears. The visitor to Reykjavik is soon made to change his mind, for the coastal districts of Iceland are often green and fertile, and the harvest of the sea has brought work and prosperity to many a small township. Yet even this is only half the story, for fertility and prosperity are confined to the seaboard. The whole of the center of the country is a high plateau of desert, a land at one time of ice-caps, at the next of volcanoes and hot springs, often the naked skeleton of earth, ghoulish lava-fields for miles and miles, or the utter chaos of a million rocks.

For long it had been known that in this remote place geese nested, but exactly to what species they belonged was merely guessed at. Twenty-eight years ago, in 1929, the English ornithologists, Congreve and Freme, determined to find out, and taking ponies and a local farmer as guide, made a quick journey into one of the lava-gorges of a tributary of the great river Skjálfandafljót which drains Central Iceland. Here at Krossárgil they found geese nesting—and they were pink-feet. On their return they described this colony in terms of such utter desolation that it has ever since remained my ambition to see the pink-feet nesting in that gorge. In the summer of 1953, 24 years later, I was able to carry it out.

In early June, with Lieutenant-Colonel Niall Rankin, well-known for his birdwork in South Georgia

A male pink-footed goose on guard near the nest.



* See the article, "Birding in Iceland," by Ralph E. Case, *Audubon Magazine*, January-February 1954 issue, pp. 32-33, 38-39, which gives information about transportation to Iceland, and the birds one may see there.—The Editor

and elsewhere, I flew to Akureyri in North Iceland, where our heavy expedition kit had already been collected beforehand. From that attractive little northern town, a jeep and a trailer carried us for 50 miles; the first 30 miles along the main road across the north to the great waterfall of Godafoss, and then 20 miles into the interior down a rough road along the east bank of the Skjálfandafljót.

At a remote farm we set up our base camp where we were to collect our ponies and guides to take us the remaining 20 miles into the interior. The farm of Vidhikir might fairly be regarded as the end of civilization and the last of the green vegetation. South of it began the lava-fields and the black sand of the central desert. Here, based on the big river valley and in particular in the many lava-canyons of its tributaries, was the domain of the pink-footed goose, never so numerous as they are in the largest colony in the world under Hofsjökul in the headwaters of the Thjorsá River, but in small scattered colonies that have been estimated to contain about 200 pairs, stretched over some 50 miles of river-valley.

One small colony, perhaps the most accessible pink-foot colony in the world, was known to be in a gorge on the main Skjálfandafljót only about 10 miles from our farm, and to this place we rode on ponies, while waiting for our guides and other horses to be collected. Here at Hrafnabjörg, the Raven's Mountain, we had our first experience with nesting pink-footed geese, and our first taste of the utter wilderness of a lava desert. Wherever fate in the future may take my steps in search of birds, I am sure that I shall never see anywhere more desolate or grim country than Hrafnabjörg. It was a deep gorge through which the snow-milky river ripped its tempestuous way. On one bank the lava cliffs fell from 70 to 120 feet into the water, over a jumble of rocks and stones; on the other a chaotic scree, quite as ugly as a slag-heap outside a colliery, reared its unlovely heap 200 to 300 feet above. All around was the grim blackness of jagged lumps of lava.

So this was the summer home of the pink-foot! And indeed it was, for our arrival was greeted by six geese. Calling in alarm, they circled round the cliffs as though they were eagles.



A lava-gorge on the Skjálfandafljót, home of the pink-footed goose.

A more surprising nesting habitat for a goose could hardly be imagined. One nest we found in mid-cliff, on a narrow ledge with a protective slab of rock to shelter it from the elements—a fine site for an eagle, but hardly, it seemed, for a goose. Other nests were on promontories of lava on top of the cliff or on buttresses in the scree. Such nest sites are, of course, deliberately chosen for protection against the pink-foot's one natural enemy on the breeding-grounds—the arctic fox.

The next day our train of seven ponies took us into Krossárgil—it was a journey over lava and rushing

ivers, over black sand that left a dust-storm trail behind us, and finally down the long strath of the Skjálfandafljót. We saw our objective along the last five miles of the journey—a deep gash in the hillside. Here, eventually, where the gorge debouched into the valley, we made camp, dismissed our horses and guides, and prepared to spend a fortnight with rocks, lava, and geese—and indeed that was about all we did have for company for the next 14 days in this almost lifeless wilderness.

Krossárgil is a fantastic creation of volcanic rocks. It had been up-

The author's pack-train leaving the farm of Vidhikir on the trek into the hinterland.



heaved once by earthquake and the passage of the ice, and, since then, eroded continuously by the raging little Krossá River which runs through the gorge. Its steep banks have long screes of loose stones and rocks which in June, at least at the lower levels, take on a short-lived mantle of beauty where mountain avens, *Dryas octopetala*, and moss campion, *Silene acaulis*, burst forth into flower. Lava cliffs frown above the screes, and here and there, great pillars of conglomerate rock look in imminent danger of collapse. As you move higher up the gorge, the wild abandon of nature's sprinkling and shaping of the rocks grows in chaotic confusion. A mile or more up, you



At Krossárgil, view of the 400-foot-high cliffs of the canyon.

Snow buntings were common on the nesting grounds of the pink-footed geese.



Moss campion, *Silene acaulis*, in flower along the rugged banks of the Krossá River.



reach the heart of the gorge, a miniature Grand Canyon of brooding cliffs, here about 400 feet high. It is weird in shape, shuddering in its height, fierce in aspect—and, be it said, not a little frightening. It is like being present at the creation, for here are the naked bones of the earth.

Here at about 2,000 feet above sea level, the geese nest. The nesting sites are easily located, even if they are in that season not occupied, for in this primeval world of naked lava and rock it is only on the promontories which the geese favor that any vegetation grows. The seeds were originally brought there from the valley, perhaps in the droppings of the geese, and thereafter they have been manured by them, until the nest-mounds, used year in, year out, are little oases of grass in a rocky desert. These nest mounds were placed usually on promontories on top of the cliff; other pairs were nesting in eagle-like situations in mid-cliff. One remarkable nest was placed on top of a mushroom of lava, the "plate" of which was perhaps six feet in diameter. On all sides were fearful drops into the gorge below, and how the young, which on a midsummer's day we saw running about on this plate, got down to freedom made interesting speculation.

The geese dominated the gorge. Indeed little else lived there. A pair of gyrfalcons had an eyrie with three chicks on the same cliffs as the geese. Snow buntings were common, and they seemed able to sustain life



The link between the gander and his mate is very close.

where all else had given up. As long as there was a stream to produce a few flies, they seemed to be happy. They shared our camp with us, and we found them far up the gorge where all other birds had ceased and when the landscape had become as stark as the moon.

In the family life of the pink-footed goose the link between gander and goose is very close. Although he never takes any part in incubation, in all the pairs that we saw, he stood, cheek by jowl, with her. In fact, the gander literally rubbed shoulders with her, and his closeness is to offer her protection. In the pink-footed goose, concealment of the nest is not a major consideration. In its remote breeding quarters this is both unnecessary and impracticable, *as there is no cover*. Protection is the important thing—protection against the fox; and this is achieved by selecting a promontory, so that a rearguard attack from a fox is impossible. Pink-feet are quite capable of driving off a fox in such sites. Yet, curiously, despite all their care, they have one very weak link. When it is time to feed, usually in the very early morning, they cover the eggs, and *both* birds go down to the strath, leaving the nest for an hour or two unattended.

Geese are proverbially shy birds, and as subjects for photography have a reputation for difficulty. Many pink-feet, however, are anything but shy at their nesting-grounds. We observed that when a nest was approached, it was the habit of both birds not to fly away,

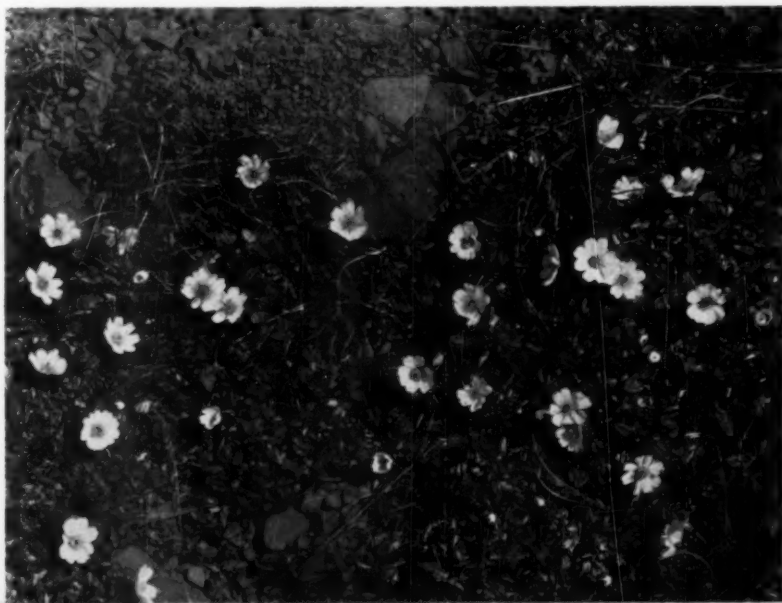
but to crouch low. We were, however, unfortunate in the pair to which we introduced our blind. They proved to be very shy and heartily disliked our activities. But careful, patient work in the end availed, and at last the great day came when, sitting in the blind, the big birds dropped on to their nesting promontory, like helicopters touching down. There, set against the columnar background of the canyon-gorge, they stood erect—wild geese in every feather. In that moment, alone with those romantic birds in their wilderness of a nesting-gorge, an ambition of over 20 years standing had been realized, and I found it very good.

—THE END

Nest and eggs of the pink-footed goose.



Mountain avens, *Dryas octopetala*, gives the river bank a short-lived beauty.



Some people object to gray squirrels in the garden, but the author found much pleasure in the company of

OLD MAME

By Miriam Pope Cimino

FOR the last eight years we have had no house pets because our work took us each day several miles away to my husband's studio. During this time, however, we have been enjoying a wild pet—a big gray squirrel, "Old Mame"—who took up with us in a whole-hearted manner and managed her affairs beautifully while we were away.

Our fat and sassy Old Mame can be both doglike and catlike, as well as human, in her actions, yet completely wild-squirrel when chasing her various relations or enemies from her claimed territory, and caring for herself through any kind of weather or squirrel troubles.

No dog could show a livelier welcome when we step from the car with our arms full of grocery bags. The trip from our car to the kitchen door takes a special kind of walking with Old Mame leaping enthusiastically against our legs and weaving circles, loops, and rectangles around us as we try to walk. She always beats us to the door, and after a few impatient rushes back to see what's keeping us, she crouches eagerly there—waiting. When the door crack becomes wide enough, she bounds in, and doglike, lets her swinging tail help her say that she's mighty glad we're home and about time, and hurry with something good.

For awhile, graham crackers, the bigger the better, were her favorite treats. Now it is small, hard, whole wheat crackers which are more exciting than peanuts to her. With such a greedy cracker-eater and cracker-burrier around, we were forced to look for something cheaper than fig-newtons, cocktail wafers, and cheese-bits for the too-frequent hand-outs. We find that the large, old-fashioned soda crackers are the best in holding down the many cracker items on our grocery bill. Also we decided that they—the unsalted kind—are probably better for her as a steady diet. We usually have a supply of peanuts and other

nuts handy; in fact, Mame gets more chestnuts than we do on holiday occasions. Instead of our being able to stuff them into the turkey she stuffs them lightly into the top of the ground or snow and dashes back to beg for more and more.

Old Mame shows a cat-like contentment stretched flat on her stomach on the summer grass, or in the same position on a limb of the willow tree by the kitchen door; or when pretending a lazy indifference to human beings. She can be really human in her diabolically clever way of handling the front door knocker, or old-fashioned latch on the kitchen door, or showing off before company.

When we first noticed Old Mame, eight years ago, she was only another wild squirrel taking advantage of the food we put out for birds in the winter. Snow comes often and lies deep in this Berkshire Hills region of northwest Connecticut. We have grown accustomed to hearing the radio weatherman finish a rosy recitation about good weather expected locally with, "but a possibility of a light snowfall over the higher elevations." This usually means a real humdinger with our not getting plowed out for several days. His "and perhaps a few snowflakes over the higher elevations" means an ordinary snowstorm. We were told when arriving here 30 years ago that it's a snowstorm if you can track a cat through it.

It has been our custom to keep a circle of ground spaded free from snow around the old willow near the kitchen for a bird feeding ground. Incidentally, it makes a very interesting place to watch from our breakfast table in the kitchen. Although we keep the usual winter suet swinging from tree branches and much appreciated by certain birds, many of them enjoy scratching, chicken style, against the frozen grass for their food.

Gradually we became aware that one raiding squirrel was more daring than the others in feeding with the birds, and annoying about pick-



"We first noticed her eight years ago."
Photograph by Joe Van Worner.

ing all the sunflower seeds from the mixed birdfeed. Nor would this squirrel dash away in fright when we came near to toss out more food. In fact, she would keep eating quite close to our feet, like the tame little chickadees. So we began to give her leftover toast, then peanuts, and other tidbits not given the birds. By the second year she was eating from our hands, and by this time we had learned that our squirrel friend was "she" and not "he." In the meantime, my artist husband had made a sketch of "Mr. Bush" as we first called him, which we used on our Christmas cards that year.

The transition from Mr. Bush to Old Mame came about rather unexpectedly. A repairman was lying on the kitchen floor examining the bottom of our refrigerator when he looked up to see a gray squirrel hanging flat, like a flying squirrel, on the screen door. "There's a squirrel on your door!" he shouted in surprise, and added after I had explained about our pet, "Looks like she's ready to have some young ones." And so she did, very shortly afterward.

When this batch of young ones followed her to our yard the first time, we were quite delighted at the unusual sight. Such cute little things about half her size, and copying everything she did, such as sitting up on the flower pots on the terrace outside the kitchen. But Old Mame was furious with them for following her and she made frantic rushes at them all the time growling alarmingly. Since then,

many of her children have followed her here. They get pretty good pickings, but not the special fare we set before our star boarder. After all there are a lot of squirrels on Sugar Hill.

Our intimate acquaintance with Old Mame has been quite educational for us. For instance, I had never known that squirrels make noises beyond the familiar chattering sound. Now I know that they do. Another squirrel encroaching on Old Mame's property rights is met with an angry growl, which increases in ferocity if the intruder needs more frightening. If mad enough, she sort of talks, in deep guttural words. It is very plain what she is saying. "You keep away, while the getting is good!"

We have learned that gray squirrels are not so guilty about robbing birds' nests as some people say. We have never known it to happen here where there are many birds' nests each year. We learned that gray squirrels do not hibernate each winter as certain other small animals do.

We have learned that a squirrel can be quite bold about going upstairs, given the chance, but terrified about coming down. On the one occasion that we allowed Old Mame to go upstairs, she grew wilder and wilder until we finally opened a window for her to swing out of, onto the shutter, which enabled her to climb down the side of the house. We learned that they can be as nosy as party-line listeners, finding the right spot in certain trees around the house to peep into the rooms we happen to be in.

Let us get a gathering in the back garden and there, always, is Old Mame. Watching at a discreet distance as guests arrive, she stands upright, with her paws neatly folded over her white apron, like a little old neighbor woman getting an eyeful. There is not a canape tid-bit she will refuse, even if she has to bury it in disgust the next moment. And regardless of the number of people at our garden party she selects my husband as the giver. He is the one who allows her to run

up his leg and sit begging for something to eat.

One more thing we learned—that it is possible for a wild creature to *like* being near you without benefit of hand-outs. There are times when, completely sated, and tired of burying things, she is content to sit quietly near us where we are seated on our garden chairs.

Our most interesting experience with Old Mame happened three summers ago. Our guest house had not been used since the previous summer but we now had my husband's sister and her husband using it. They came over for breakfast, after their first night there, looking rather haggard. They explained that they had been kept awake by strange noises in the chimney off and on during the night, and that our brother-in-law had finally gotten up and pounded heavily against the pipe that went up through their bedroom. They thought, and so did we, that the sounds were made by chimney swifts.

Early that afternoon while we sat quietly on the shaded lawn to escape the heat, we saw a strange sight. Old Mame came staggering wearily

"Gradually we became aware that one squirrel was more daring in feeding with the birds." Photograph by Hal H. Harrison.



across the lawn with something heavy. She would go a short distance then put it down to rest before going on again. From the limpness of the object she carried, my husband at first thought it was a dead squirrel. But as she came closer we saw that it was a live young squirrel. She had it wrapped around her neck like a fur-piece. One of her resting spells was next to a dry stone wall, and the young one rose from the grass where she had laid it and crawled into a crack in the wall.

Old Mame tried with human patience for a long time to get it out. But she could get herself only partly into the crack. While we sat motionless and watched, she made gentle, pleading sounds and kept poking in a paw and waiting. Finally she came straight to my husband and looked up at him before leading him to the wall, from which with his manipulation of stones the young one was finally extracted. Taking it by the neck she went wearily off up the hill toward some old apple trees. We respected her privacy, and did not follow her, but kept quiet and watched.

When she returned, she first climbed an elm tree by the guest house, then swung over to the roof and went down the chimney. While we watched, she made two more trips to carry her youngsters out of the chimney. But on these trips, although she did stop to rest, she did not go near the wall. She rested herself, with the last young one, on the grass quite near our feet. And we were almost too amazed to whisper.

"If we'd only known," my sister-in-law kept worrying afterward. "We had no idea it was Old Mame and her babies in there." We never did pry into where she took them. She had let us share the secret of their removal from the chimney, which was quite enough.

Last winter we spent two-and-a-half months in Florida and worried a bit about Old Mame. Then a most disturbing letter came from my daughter. She had gone into our house and found a scene of destruction. Broken dishes, glassware, lamps, torn curtains, upstairs and down, and a very dead squirrel on the hearthrug in the living-room.

We guessed what had happened. A squirrel—and neither of us could say the words, "Old Mame"—must have gotten in somehow through the cellar and had tried in vain to get out of the place.

Then, on the morning after we had returned from Florida, there she was, sitting on the kitchen roof outside my window. It *had* to be Old Mame, I said. As I dashed downstairs I gathered a box of graham crackers on my way to the kitchen door. Sure enough, it *was* Old Mame! I opened the door and let her in. My husband came down to greet her with, "What are you doing in here, you old wet rat?"

Old Mame has shown no signs of aging since she came into our lives. She has had her battle wounds but none of them too serious. Her mate, the male squirrel, has appeared a few times and has knocked her about. It must have been he, the father of her children, or she would not have taken so much from him. Recently she came to us with a cauliflower ear and much thinner tail. She looked quite unlike herself when I opened the kitchen door. But what other squirrel would be roosting on the door latch and chattering indignation over my delay? —THE END

"On the morning after we returned from Florida, there she was!"
Photograph by Gordon S. Smith.



to make a career of it. To start with, at least, his function should be one of evaluation and criticism. When he has established himself firmly and demonstrated what he can do in this capacity, it may be possible for him to assume certain planning functions. He might then even initiate ecologically sound public policies and enterprises.

Breadth of training cannot be overemphasized as a qualification for this position. It should not only include ecology courses and the obviously necessary botany, zoology, and bacteriology, but chemistry, geology, soil science, agriculture, economics, and geography. An absolute essential would be a fluent and effective command of the English language to enable the ecologist to express his ideas in a clear and convincing manner. Two or more foreign languages would open to him whole sets of ideas and even principles that might never, or only with long delay, come to his attention in English. In addition to academic training, demonstrated ability to work out a detailed problem in interrelationships would be equally a requisite.

If positions of this sort should open up tomorrow, I wonder how many adequately qualified young ecologists would be available to fill them!

—THE END

Arctic Wildlife Range Advocated by Alaskans

"Following recommendations made by the Tanana Valley Sportsmen's Association and other Alaskan organizations, conservationists in the United States have urged the establishment of an Arctic Wildlife Range in the Brooks Range of northeastern Alaska.

"Dr. Olaus J. Murie, president of The Wilderness Society, who with Mrs. Murie was a specially invited guest and speaker at a meeting of the Tanana Valley Sportsmen's Association on May 14, 1957, has appealed to conservationists in the States to cooperate with the Alaskans for the preservation of this important wildlife area. . . . Great caribou herds, mountain sheep, grizzlies, foxes, and many other arctic species are now in this range and there also are plans for reintroducing the musk ox, according to Dr. Murie. . . ."—Quoted from a news release of The Wilderness Society.

HOW IT GOT ITS NAME

insect



Drawing by Walter Ferguson

By Webb B. Garrison

GAIUS PLINUS was best known to his countrymen of the first century as an official of the Roman Empire. He held military, financial, and naval posts of considerable importance. But until he was killed investigating a volcanic eruption, he devoted all his spare time to study and writing. At his death, he had completed part of a bulky manuscript which became famous as his "Natural History."

These volumes dealt with a tremendous range of subjects—including wee creatures to whom Pliny

gave the name *animal insectum*. It was not original with him; earlier observers had formed it from *insecare* (to cut into). What could be more appropriate to designate an animal whose body is prominently notched—or cut into—at the middle?

Precisely 1,522 years after the death of Pliny, a one-time physician translated his works on natural history into English. In doing so, Philemon Holland abbreviated the Roman's term for "the notched animal." Transformed from a Latin adjective to an English noun, *insect* was an immediate success and has had no major competitor since 1601.

THE END

ARE WARBLERS

By John V. Dennis

Effects of the Cold Spring of 1956

The year 1956 may well go down as one of the most puzzling of all when it comes to bird migration. Side by side with records of unusual abundance there have been disturbing signs of scarcity. The warblers which provide an excellent index of a good or a poor season have provided the greatest paradox. The spring flight for 1956, so ably reviewed by Aaron Bagg*, was notable for tremendous flights in some areas and poor ones in others. Fall warbler migration in the eastern United States, was a week or two to a month behind schedule, and in some areas almost non-existent.

As an example of this 1956 scarcity, Raymond J. Middleton, veteran bird-bander of Norristown, Pennsylvania writes me: "Some years ago I banded over 600 warblers and other land birds in October, also had many years in the 400's, then in a poor year would drop to 300. This October I have banded 49 birds with five days to go. . . . No flight of myrtle warblers at all."

From Toronto, Ontario, comes a similar example of scarcity from a bird-bander. Frank Smith, who in 1955 banded 1,400 warblers, complains that in 1956, with almost twice as much effort, he banded only 800. In May, during the height of the warbler migration, he reported that freezing weather exacted a terrific toll of birds. Between May 22 and 25, he could find dead or dying birds almost everywhere he went. On the return flight in fall, warbler numbers were drastically low. Only the myrtle warbler had a good flight, the rest were 35 to 45 per cent lower than the previous year.

In New England, warbler counts varied from place to place. In Maine, nesting warblers were generally less, but the northern water-thrush and a few others migrated southward in good numbers during the fall.* The myrtle warbler, which inundates New England so abundantly during a normal fall, was notable for the variation of numbers in its flights. For example, 1,500 were seen at Monomoy off Cape Cod on October

*Maine Field Naturalist, Vol. 12 (4): 114. 1956

Population Studies of Birds

To know the comparative populations of small birds from year to year, may help us to analyze the reasons for their rise and fall, and thus to help us in bird conservation work. The scarcity of warblers in 1956, was probably caused by a combination of decimating factors—a cold, late spring, a scarcity of insect food, and possibly the cumulative effects of tremendous kills of warblers at airport ceilometer beams and TV and radio towers in the autumn of 1954. Studies of migration—the numbers of birds that arrive and depart at certain places—such as at Nantucket Island, the subject of this article—may help us to a better understanding of the population dynamics of birds. When we have statistical proof that certain kinds of small birds are growing less numerous, we may also discover the causes for it. If these causes are partly man-made, we have a powerful case for ameliorating, or for eliminating those man-made causes—whether they are the bright lights of ceilometer beams, deadly insecticides, or the man-made destruction of the habitats of birds. The more we understand the requirements of birds for survival, whether on their nesting grounds, during migrations, or on their wintering grounds, the better we shall be equipped to protect them.—The Editor

12, but little more than 10 miles away on Nantucket, where several of us kept continuous records throughout the fall, the myrtle warbler flight was the poorest in years and this was true in many other localities.

The over-all picture of warbler populations in 1956 was too complicated to permit broad generalizations. Only where observations have been made over a period of years can it be intelligently said whether 1956 represented a "poor" season, generally, or whether decreases were, in part, or mainly, balanced by increases. Looking at Nantucket, where our fall observations have been continuous for six years, the record shows a drastic decline for some species, with a number of others apparently rounding out a good season. The surprise for Dr. Lee Jay Whittles and myself, who with assistance from others have been carrying out the observations, was that we saw most of the warblers that are considered rare, while many which we had usually accepted as common, or abundant, were below normal.

Studying Bird Migration on Nantucket Island

Nantucket has special advantages for anyone interested in the study of land-bird migration. Its geographical location, somewhat off the main paths of migration, is nevertheless on center for an over-water migration of considerable scope which, in itself, is of great interest. Nantucket, the last bit of land in southeastern New England (see map), acts as a haven for birds migrating southward in fall along the New England coast—birds which are flying toward the southwest over the ocean. In the latitude of Nantucket, autumn migrants must either radically alter their courses or fly to certain death out over the ocean. Although we

*Audubon Field Notes, Vol. 10(4): 308-314. 1956

DECREASING?



Myrtle warbler photographed by
Allan D. Cruickshank.



have seen land birds at sea, flying in the wrong direction so far as their safety was concerned, we have yet to see a bird leave Nantucket Island in a southerly or easterly direction—out over the ocean—both of which would mean suicide. When birds migrating southward leave our island, *their flight is generally to the northwest, sometimes to the north.* Thus migrant birds in fall, reaching Nantucket from north or northeasterly quarters—the expected source—are obliged to alter their course, when leaving, by as much as 270 to 360 degrees.

How Birds Re-orient Their Migration Flights

The unfailing ability of birds to make this almost complete turn of the compass never fails to amaze us as we see the feat duplicated year after year. Without a guidepost on land of some kind, we wonder if birds could make this adjustment. The 14-mile-long island of Nantucket, shaped like a half-moon, with one tip pointed toward the southeastern extremity of Cape Cod and the other toward Martha's Vineyard, is a natural landfall and a first guidepost in shifting migrating birds away from the sea and toward the mainland. Nantucket is the southeastern anchor in a chain of islands which acts as a stepping-stone on a route which takes birds first in a northwestern direction toward the mainland. Just to the northwest of Nantucket are the small islands of Tuckernuck and Muskeget. Eight miles to the west of these dots on the map is the much larger island of Martha's Vineyard. And finally, if the stepping-stones are still needed, birds have the alternative of the Elizabeth Islands at the entrance to Buzzard's Bay and Block Island at the entrance to Long Island Sound. All the islands in this area have one thing in common; they are remnants of glacial moraines deposited in the Wisconsin Ice Age.

Where Migrant Birds Concentrate on Nantucket

Only certain spots on Nantucket have any sizable concentrations of bird migrants. Most of the island is almost completely open; but contains some scrubby growth, predominately bayberry shrubs and oak

trees. A few thickets of introduced pine trees on the island seem to be the chief guideposts to migrating birds, and also the most desirable places for birds to feed and rest. One thicket, of only a few acres on the south shore of the island, is the main pivotal point in the realignment of bird flights from the southwest (which would carry the birds over the ocean), to northwest (which is toward the mainland). At this thicket, known locally as "The Mothball Pines," we have carried on most of our observations. It seems that year after year this thicket is of prime importance in the redirecting of the flight of migrating birds. Here, a cross-section of the season's migration, and composition, can be obtained from beginning to end. Birds are surprisingly fearless, and in the pines can be viewed to excellent advantage. If all the markings are not seen on a bird the first view had of it, there is generally a good chance within this limited area of cover that the bird will be seen again before it joins its fellows. Then it heads upward unto the sky in zig-zag course,

and disappears toward the northwest.

So dependable is the Mothballs pine thicket for migrants that we could very well leave the rest of the island unattended and spend our whole time there. If it were not for the need to plot routes and directions of flights through the island, and to obtain a knowledge of a few species which apparently for reasons of habitat seldom visit the Mothballs pine thicket, this would be our routine. In August of 1951, when Dr. Whittles and I began our observations, we stuck, primarily, to this one thicket. Later we discovered that other thickets were suitable for observing the arrivals and departures of birds. These thickets have taken up some of our time, but the Mothballs has been the source of the figures which give us population trends from year to year. And beginning in August of 1955, we instituted bird-banding operations there. Some years our coverage has been better than others, but each season sees our knowledge increased and finds us in a better position to judge the migration as a whole.

Dr. Lee J. Whittles shows under-wing colors of a rose-breasted grosbeak to visitors during banding work on Nantucket. Photograph by John V. Dennis.



Migration Problems on Nantucket

Two problems faced by observers of migration on the mainland—evaluating bird migration at night, and the influence of weather on its abundance—do not give us major concern. Usually most small birds, including the warblers and vireos, fly by night, unless they are over water or in uncongenial surroundings. Bird migration on Nantucket is primarily during the day. We feel that our Nantucket flights originate largely in Maine, Nova Scotia, and other northerly land areas. Of the

vast night-time migrations taking place in those areas, it is only to be expected that a part of it should lose its land bearings, and in daylight, find itself out over the water. There are numerous accounts of land birds out over the Gulf of Maine or off southern New England. Nantucket offers a natural haven for such fliers.

Of special interest is the fact that most of our arrivals are fresh on reaching us, and ready to move on after briefly feeding and resting. These birds do not seem bewildered or lost. Nor does the character of the flights change appreciably from

year to year. The same species are involved for the most part, and except for the unusual season of 1956, in about the same proportions. Much of this suggests migrants pursuing a course, and not the accidental visits of birds blown from normal lanes of travel. We do not know what influences on birds to the northward determine the ones we will get, but we do know that the vast majority of our birds arrive during daylight. This gives us a very decided advantage in studying the warblers and other birds, which ordinarily migrate at night. On the mainland the observer has the un-

Continued on Page 227

★ ★ ★ NATURE IN THE NEWS ★ ★ ★

*Reprinted from THE BRISTOL PRESS, Bristol, Conn.
June 22, 1957*

School Boys Down Hawk In True Indian Fashion

By ESMONDE J. PHELAN

Many years ago Chief Compounce and his brave warriors roamed the hills and valleys of Bristol and vicinity. They fished and hunted with primitive weapons. Their aim with the bow and arrow was deadly.

In these modern days, when even the school child is taught the power of the atom bomb, for war or for peaceful purposes, one might well think that Indian lore was dead and that it had passed on to the Happy Hunting Grounds along with its creators. But that is not the case.

Yesterday while Bristol's wheels of industry were whirling as usual, two Stafford School boys decided to go hunting. There was nothing unusual in the decision to go hunting, except that the boys decided to do it in Indian style.

Armed with bow and arrows and dressed in full Indian regalia the youthful hunters set out on what was to become an unforgettable trip. In the woods adjacent to the Stafford School the boys spotted a low-flying chicken hawk.

With the precision of Chief Compounce and the confidence of youth, the boys fired their arrows making two direct hits. While the wounded hawk fluttered around stunned the boys poured four more arrows into the body of the chicken thief and it was all over. The boys had come to the woods, they had seen and they had conquered.

Proudly they trooped into the Press Office and exhibited the hawk. It was

a big fellow and he had a wing spread of thirty three and one quarter inches.

Whether the youthful hunters will have their prize stuffed and mounted is not known at the moment but there is one thing certain and that is they have a picture to remind them of the successful hunt. And the picture will be viewed by all their pals at the Stafford School where they just completed the seventh grade.

June 26, 1957

Communicated Killing Chicken Hawk Direct Violation of State's Game Laws

Editor, Bristol Press:

I don't like to sound off because I like the *Bristol Press*, but I was very much put out when I looked at Friday's copy of the *Press* and saw the publicity given to a couple of kids who shot a so-called chicken hawk with a bow and arrows.

Yours Truly is a conservationist and cannot go along with the glorification of two youngsters who go out and shoot wildlife, directly against all the game laws and the regulations concerning matters of wildlife in America today.

If we encourage youths to shoot hawks, catch pheasants by hand, and kill black snakes, we unconsciously disturb the plans of nature, and eventually do irreparable harm. There are enough adults popping away at wildlife with guns, without encouraging kids to do likewise.

These so-called chicken hawks very seldom catch chickens and they are in every instance protected by our state from being shot at by hunters; in fact, they kill more rodents than chickens.

Black snakes, opossums, in fact, every wild thing has certain protection by the game laws of our state, and I hope that some of your writers will think it over carefully, in the future, and try not to give publicity and praise to kids who do things that are contrary to the rules of true conservation and the laws of the state.

Sincerely yours,
HORACE R. WHITTIER.

June 24, 1957

June 26, 1957

A Matter Of Hawking

The *Bristol Press* has been taken to task in a communication for a human interest article it printed concerning the shooting of a chicken hawk with bows and arrows by two Stafford School boys.

It seems that we recognized the fact that the story was a good human interest yarn and we treated it that way. There was nothing wrong with that, but now to our horror we learn from the writer of the communication that by shooting the hawk the boys broke the law. Perhaps we were guilty of being an accessory in the case because of the publicity we gave to the unusual incident.

We have no excuse to offer except to say that in this atomic age when the whole world seems poised for a final battle and when murder and crime is on the increase it may be we are too close to the serious things of life to have remembered that there is a law against shooting chicken hawks.

Then too, perhaps our reason for going all out on the story was the fact that maybe we haven't lost our youth or our confidence in the boys and girls of today.



1





INSECTS – Face to Face

By Edwin Way Teale

All photographs by the author

Drawings by Susan N. Swain

Meeting the insects face to face, with their strange countenances magnified, how many would you recognize? Shown here are the faces of a carpenter ant, a white-faced hornet, a robber fly, a monarch butterfly, a cricket, a lacewing, a grasshopper, a scorpion-fly, a horsefly, a June beetle, a dragonfly, a honey bee, a fishfly, and a damselfly. You will find the faces identified, and the families to which each insect belongs, on page 226.



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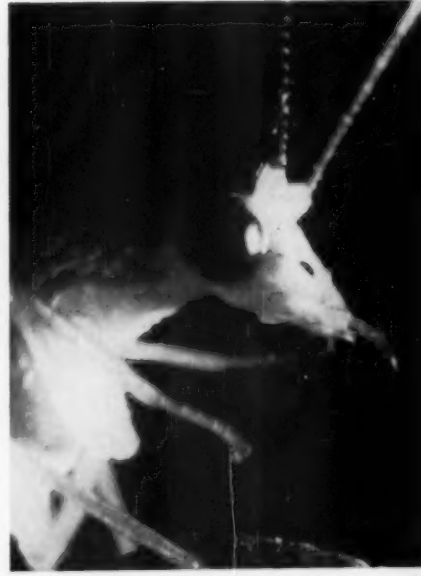
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SEPTEMBER-OCTOBER, 1957

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WOLF

By Olaus J. Murie*

WHAT picture is conjured up in our minds by the word "wolf"? To those of us far removed from wilderness experience there comes to mind the traditional image of something bad, echoes of centuries of childhood stories engendered in the minds of those who looked out upon "nature" from the comfort of a human habitation. To those who have dedicated their lives, professionally, to wolf-hating, and propaganda to justify their personal preoccupation, the wolf is something evil, to be gotten rid of as soon as possible. To still others, those who have become aware of what takes place in the out-of-doors, who have the scientific facts and the sensitivity to what nature has to offer us, "wolf" symbolizes all those original natural values so important for us, but which, through careless planning, are slipping away from us. In this class are the whooping crane, the black-footed ferret, and many others, not to mention the concept of wilderness itself.

When I think of wolf there comes to mind a camp on the Porcupine River in northeast Alaska. It was late in August. With my family and a friend we were returning from a Far North expedition to band geese for the U. S. Biological Survey, now called the U. S. Fish and Wildlife Service. The mosquito season was over, and we decided to simply spread our sleeping bags on a gravel bar that night, and not to set up the tents. Our year-old son slept in his bed-box, and we lay there, serene, under the clear sky. It was very early morning when I awoke suddenly, hearing someone exclaim: "What's that? Listen!"

There it was again, across the river and upstream—a long-drawn, wild, but musical note. *A wolf!*

* Dr. Murie is President, The Wilderness Society, 2144 P Street, N.W., Washington 7, D.C. He is a world-renowned biologist and ecologist. A biographical sketch of Dr. Murie appeared in *Audubon Magazine*, July-August 1950 issue.

—The Editor

Then we saw the singer himself, on the high bank of the river, looking in our direction.

"There's another one, downstream!"

Evidently we were intruders on their home ground, and we lay there, listening to their voices as they raised their muzzles to the sky.

As we look back on our summer's adventures that wolf serenade of the dawn stands out as one of the high points in our experience. But what of all that we have heard about the cruelty of the wolf, its habit of killing things, the concept of the *bad wolf*? I wonder if we human beings can be fair in our appraisal of anything?

Certainly the wolf kills, using his teeth, the only weapon granted to him. And he will fight. But, so do the chickadees quarrel among themselves at the feeding table—and how we ourselves curse each other across the oceans, and in our own communities, and even kill each other. The wolf kills for his food. Nearly all of us are spared the job of killing for ourselves in order to have the steak we placidly prepare for our meal. Someone else does the killing for us, in some place far away.

But how about the damage the wolf does to other wildlife, especially game animals? This is the fundamental criticism from officialdom. It is about time we get the facts. What *does* happen? Do we dare to get ecological facts? Are we afraid they will upset preconceived notions and public policy?

I want to express a word of caution in our impulse to condemn our public administrators. Along with so many others of us they have been fed the old traditional ideas about "predators." Ecology is, after all, a new science. We are only now beginning to realize that there is such a thing as population dynamics, and we know little enough about it. And we must remember that it takes time for fundamental scientific thought to find expression in policy shaped

by modern administrators. Furthermore, even some of the administrators, possibly not the ones who shape public policy, see some of these ecological truths.

Let us examine a few facts. Nearly a decade ago, when so many people became hysterical over the often recurring upswing of wolf populations in the North, the Wildlife Branch of the National Park

Illustrations by the author.



Service established a thorough study of the wolf in Mt. McKinley National Park, a study which extended over several years. The resulting scientific report, "The Wolves of Mt. McKinley," by Adolph Murie, presents not only factual data on the ecology of the wolf and other animals but also of the few intimate studies of the home life of the wolves. We found that the wolf's prowess with its teeth, and its courage, came into prominence when a group of wolves even attacked a grizzly that happened to wander into the privacy of the home den.

Also, it was found that on rough

ground, in the chosen habitat of the mountain sheep, the wolf was at a disadvantage in its hunting. It was when the sheep became numerous and some of them began to live on lower ground away from cliffs that they became more vulnerable to seizure by hunting wolves. As a matter of fact, the wolves apparently preferred to follow the caribou, as well as, of course, some small animals. But there is an important consideration here. A principle was found to be true, one which can be deduced by common reasoning—that in a chase of caribou, it was the lagging animals, the weaker ones, we might say the less

fit, which were eliminated. The stronger ones escaped.

In the *Journal of Mammalogy* for August 1956, Lois Crisler tells about the observations which she and her husband made in a period of over a year, while taking pictures in arctic Alaska for the Disney Studios. Many times they saw wolves pursuing caribou. Their account is well worth reading for the significant details on this important question. They found that as a rule healthy caribou escaped, and the sick and the lame were taken. In one case when a caribou outdistanced a wolf, Mrs. Crisler tells of the wolf sitting down, and she

"There it was again, across the river and upstream—a long-drawn, wild, musical cry."



comments: "Typical was the wolf's prompt judgment as to when the chase had become futile." The Crislers used the term "rocking-horse caribou" for those animals that limped or were otherwise disabled. These were the ones that predominantly furnished the food for wolves.

There has been much discussion of the decrease and increase of caribou herds and those concerned have failed to consider certain biological facts. Many years ago, the late Lawrence J. Palmer, under the direction of the naturalist-chief of the Biological Survey, E. W. Nelson, made some fundamental studies of lichen growth. In later years his findings were ignored. Prior to his studies reindeer herds were introduced into Alaska by well-meaning but uninformed federal administrators. There resulted widespread overgrazing, just as in so much of our own country. In 1925 I found caribou carcasses on Unimak Island—"winter kills"—and there was not a wolf on the island. I am told there are no caribou there now, although at one time there were something like 7,000. Wolves had nothing to do with it. The report on this, too, has been buried in official files without perusal. In 1914-15 I spent 18 months along the Labrador Peninsula. The lichens had come back, and were ankle deep—but in the food-population cycle the caribou had not come back. There is a long story there, involving the Indians struggling to keep alive, and modern firearms, and there is not space here to go into details.

An important consideration in dealing with the caribou problem is the food supply, possibly more so than in other animals. A caribou has no "home range" as it is generally thought of. The animals are always moving around, and sometimes go on long migrations. While caribou eat a great variety of plants, lichens are a very important attraction, possibly an important dietary element. The caribou is a herd animal, and it would seem that being constantly on the move is a racially learned necessity, to preserve their range. *Food and space* are the vital necessities for maintaining a caribou population. Scattering deadly poison over our landscape, with its resultant destruc-



"Caribou are constantly on the move—a racially learned necessity to preserve their range."

tion of wolves and other animals, to the accompaniment of lurid hate-propaganda, completely avoids the issue and offers no permanent policy for the welfare of our game herds.

There is a growing feeling in Alaska, which I recently found among several organizations and individuals, that our experience in the out-of-doors should be based on higher standards of human behavior. Sportsmen and guides are protesting against some of the unsportsman-like behavior in the hunting field. And in the July 7, 1955 issue of *Jessen's Weekly*, a newspaper published at Fairbanks, Alaska, Dr. L. L. Huffman has discussed, at considerable length, the wolf-poisoning program in Alaska. For once, in public print, appears a discussion of the natural population fluctuations, or cycles, in the animal world. Dr. Huffman discusses animal numbers in relation to food supply as the vital concern that should have our attention. According to this article, Canadians are making a study of the poisoning technique used by us. Are we afraid to face the ecological facts? Is the technique of destruction all that we can offer our Canadian neighbors in the field of wildlife management?

Dr. Ian McTaggart Cowan of the University of British Columbia made a study of the wolves in some of the Rocky Mountain national parks of Canada; a careful scientific-seeking for facts. In his report is this statement:

"There is thus further evidence here that, under certain circumstances, predators are powerless to prevent game irruptions. Under existing circumstances the predators present—coyote, wolf, fox, lynx, wolverine, mountain lion, grizzly, and black bear—together are not taking the annual net increment to the game herds, nor even removing the cull group, a large part of which becomes carrion following death from disease, parasitism, or malnutrition."

Sigurd F. Olson, who is a close and careful observer of wildlife, made a study of the wolves in northern Minnesota, and he stated:

"Long investigation indicates that the great majority of the killings are of old, diseased, or crippled animals. Such purely salvage killings are assuredly not detrimental to either deer or moose, for without the constant elimination of the unfit the breeding stock would suffer."

Mr. Milton H. Stenlund of the Minnesota Department of Conservation, made a very thorough study of the wolves of northern Minnesota, on a Pittman-Robertson project.* He accumulated a great deal

* "The Pittman-Robertson Federal Aid in Wildlife Restoration Act was approved (by Congress) on September 2, 1937. The Act provided that the 10 per cent (now 11 per cent) excise tax on sporting arms and ammunitions should be made available for wildlife restoration work by State fish and game Departments. Funds appropriated annually by the Congress are apportioned to the States on the basis of the number of paid hunting license holders and land area. . . . Program operations are chiefly the responsibility of the States."
p. 9, "Five Years of Pittman-Robertson Wildlife Restoration, 1949-1953," published by the Wildlife Management Institute, Wire Building, Washington 5, D.C. (1954).

of information. He emphasizes the importance of wilderness areas as controls in ecological studies, and we find statements such as the following:

"Starvation has been the major decimating factor in the Forest deer herd. . . . during the peak period in the deer population the wolf was of benefit to the herd because any reduction of the overpopulation at that time helped the range and maintained a higher deer population for a longer period than would otherwise have been possible."

Mr. John M. Keener wrote a word of appreciation of the timber wolf in the *Wisconsin Conservation Bulletin* for November 1955, and, as reported in *The Living Wilderness*,* said: "This animal is a symbol of the true wilderness."

To this I can testify. I have been in the wilderness in the West and in the North with many people. And if we saw a wolf, or even a track on the sand of a river bar, it stirred our imagination.

Speaking of Wisconsin, Mr. Keener said that "a live timber wolf is far more valuable than the \$20 (bounty) he is worth dead."

Returning again to the Alaskan scene, when I began work on the study of caribou in 1920, there were a modest number of mountain sheep in the White Mountains northeast of Fairbanks. Many years before that, near the turn of the last century, Dr. Osgood had seen a few near Coal Creek, in the Eagle district, and these were so few that he predicted that they would disappear. Then, some years ago, when wolves began to increase, in the general hysteria, people everywhere were urged to get excited, and some sincere but entirely uninformed people even as far away as New York worked hard to get started an official war against carnivores in Mt. McKinley National Park. That

would solve everything! Well, the uninformed hysteria has subsided somewhat. No one paid much attention to such areas as the White Mountains or the Upper Yukon. And yet, wolves or no wolves, the mountain sheep are still there!

In 1952 F. Fraser Darling, a naturalist of England, and Dr. A. Starker Leopold worked all summer in Alaska under the auspices of the New York Zoological Society and the Conservation Foundation. Both are outstanding scientists devoting their lives to animal ecology in the broad sense. In their book, "Wildlife in Alaska," we again find that wildlife experts stress the importance of food supply and point out that the preferred caribou food, 'lichens,' have been burned out by the prevailing forest fires throughout interior Alaska. In a very fair survey of the situation, they stressed that sufficient food for game animals is far more important than the control of predators that kill game animals.

What shall we do about it? There are two things we should consider, as citizens or as employees of government—federal or local. I want to emphasize these two things.

First is the recent evolution in human thinking. I am convinced that among a great many people there is emerging a greater sensitivity and more generosity toward wildlife. Ever so slowly, we are getting away from many traditional ideas that have no relation to truth. For example in the West, many ranchers have refused to let government poison-squads come on their lands. One rancher wrote to me, saying what a hard time a group of them had to keep government poisoners off their lands, and ended his letter with: "Maybe we can still do something for the coyote!"

These are ranchers, the ranchers I know who are not in it only as a business, but because they like that way of life. And the organized sportsmen are now trying to do something about a higher view of

things in their own field. As an example, the National Wildlife Federation put out a pamphlet urging the preservation of a whole list of vanishing species—mammals and birds—which are not game. And at Congressional hearings we find representatives of sportsmen's organizations strongly urging the protection of national parks. Here and there throughout the states are game commissions which have won popular commendation because they advocate higher sportsmanship and appreciation of non-game species.

In other words, we the people are beginning to feel the wholesome impulse of generosity toward our fellow creatures, and we realize that whatever our individual interests, as people we have a common goal and we can only win by combining our forces.

Second, and this is an important consideration. Probably because of our exuberance in coming to a new continent, we have acted like children getting into a pantry well-stocked with goodies. We are still exploiting our resources wildly. Overstocking our lands with both livestock and game is the rule. We don't want to face the facts. We worship bigness and numbers as ends in themselves.

But, many scientists have been patiently working to accumulate the facts of life. More and more of them are amassing data in the new science of Ecology. I am sure all our ecologists would agree that the problem we face in our efforts to conserve game and other wildlife is *space* and *food*. I could name any number of scientists who realize this now. Of course, there are some instances of over-shooting being a temporary factor. But supplying sufficient living space and food are the principal problems. Wolves, coyotes, lynx, etc., have little to do with this basic problem. When will our administrators have the courage to face this fact, and base their policies on the findings of their own well-trained scientists? Only when we, the people—sportsmen and non-shooters—can agree on diversity and on choice, in outdoor enjoyment. No one group can win alone; our earth belongs to all of us. Perhaps those who enjoy the wolf and the chickadee in the wilderness environment deserve also to be heard in officialdom.—THE END

* *The Living Wilderness*, official publication of the Wilderness Society, is published quarterly at 2144 P Street, N.W., Washington 7, D.C. Membership, which includes *The Living Wilderness*, is \$2.00 a year.—The Editor



The Least Sandpiper*

Little Sand-peep, Wilson's Stint, Ox-eye, and Mud-peep are some of the common names for our smallest of sandpipers.

By Henry Marion Hall

FOR all beach-waifs, the ocean strand southward is the road to palm-green islands and the southern seas. The endless crescents of the beach are transient and unsubstantial. Drowned, fathoms deep, every few hours, they are always being created again, never two days alike, but molded by every whim of the waves.

To have close-up views of the shorebirds that throng our beaches in autumn, it is necessary to reach the shore very early, and while the tide is rising. Scoop a hiding place

some four feet deep among the flotsam at the beach crest. Then set out a dozen snipe or plover decoys, matching them in groups facing the breeze and so far down the incline that the skirts of the breakers trail about them every little while. That is the best place for them, although you have to shift some every so often, as the tide creeps up.

Meanwhile only the tide disturbs the birds at their breakfast, driving them up the beaches or forcing them to flit elsewhere for better fare. The decoys are scarcely in place when there comes a ripple of light as a flock of least sandpipers, tiniest of the order, flash in from nowhere. Steady and close as a school of minnows slipping over a shoal, they settle among the decoys, but if you raise a hand they vanish in a flurry, just as fish underwater will do. Once in a while you will see them coming from a distance, seeds of light that

grow visibly, flower in the air, and then are gone. They remind you of flying fish that flutter away when something noses them out of the weed in the Gulf Stream, then plump into the first big wave they meet.

The least sandpiper, this smallest of shorebirds, is extremely tame and unsuspicious. A flock will trip past your blind so close that you can see them wink or scratch their heads. If a man could move his legs as fast as the little yellowish legs of this sandpiper, he might run a hundred yards in five seconds. Bands of these peep trip along the strand, pausing every second to seize some minute crustacean from the weed uprooted by the rollers. Sometimes several stand around a fish stranded on the beach, and swallow the flies buzzing above its carcass.

Everytime a wave slides back, beach-fleas—small crustaceans—by

*According to the A.O.U. Check-list (Fourth Edition, 1931), the least sandpiper, *Erolia minutilla*, breeds from Alaska, British Columbia, and Labrador, south to the Upper Yukon, Magdalen Islands, Newfoundland, and Nova Scotia. It winters from southern California, Texas, and North Carolina, through the West Indies, and Central America to Brazil, the Galapagos Islands, and Central Patagonia. In migration it occurs throughout the United States, west to Siberia, and north to Greenland. Its occurrence in Europe is "accidental."—The Editor

"The least sandpiper is tame and unsuspicious." Photograph by Heathcote Kimball.



myriads kick themselves from the foam only to be gobbled by the sandpipers, which dash down and snatch them before another breaker can chase them back to dry spaces once more. Not that the sandpipers run any danger, for, like all shorebirds, they can swim when the need arises. Running on the sand they are sometimes difficult to see. Their necks and breasts show a brownish wash, their backs are mottled gray-brown, with darker flight-feathers, and below they are white. You might think that they had taken these hues from the sand over which they scamper. They have silver bosoms but their brightness blends with that of the breaker which puts them to flight. When they fly back to shore a few rods farther on, they seem to vanish. They appear and disappear like the watery ripples, which spill their lustrous lining on the beach and then subside.

Least sandpipers are even more abundant on the harbor flats and on the muddy margins of brackish ponds or creeks. Everywhere their small size—5 to 6½ inches long—and their pleasing cries of "*Peet-weet! Weet! Weet!*" distinguish them from larger shorebirds with which they throng the flats and bars. Their range includes both North and South America, but like so many others of their kind they nest far to the north. They lay their buffy eggs, three or four to a set, in a grass-lined hollow on some arctic island, or along the shores of the Arctic Ocean, or farther south in Labrador and regions west of that rocky peninsula. The female is a trifle larger than the male, and the male, like a phalarope is said to do most of the brooding. Their young when hatched are scarcely bigger than bumblebees. Yet they run about and pick up their own food as soon as their natal down has dried. You never see sandpipers feed their chicks, although they shelter them at night or during storms, holding them snugly under their warm breast feathers. The young grow rapidly and by midsummer are as big as their parents.

Least sandpipers feed on beach-fleas, flies, mosquitoes, mosquito larvae, crickets, and other insects. Alongshore they devour bloodworms, minute crustacea, and marine animalcules. On all such flotsam they grow fat and trim. They are cheerful, social little creatures, consorting



"Their young, when hatched, are scarcely bigger than bumblebees."

with semipalmated sandpipers, sand-erlings, and other larger shorebirds. The range of the least sandpiper includes North and South America, and they winter south to Central America, Bermuda, Chile, and Brazil. They are commonest on our coasts late in the summer, but move farther south in September and October. What brave mites they are! The smallest of all shorebirds they sometimes span the broad Atlantic

Ocean, and have been seen in the British Isles, Finland, and France. Blown about the world like spindrift they seem at home everywhere. Their color patterns are not markedly different from those of other closely related "peep," but they may always be known by their tameness, their greenish or yellowish legs, and by their tiny size. Their voices are as sweet and gentle as their natures.

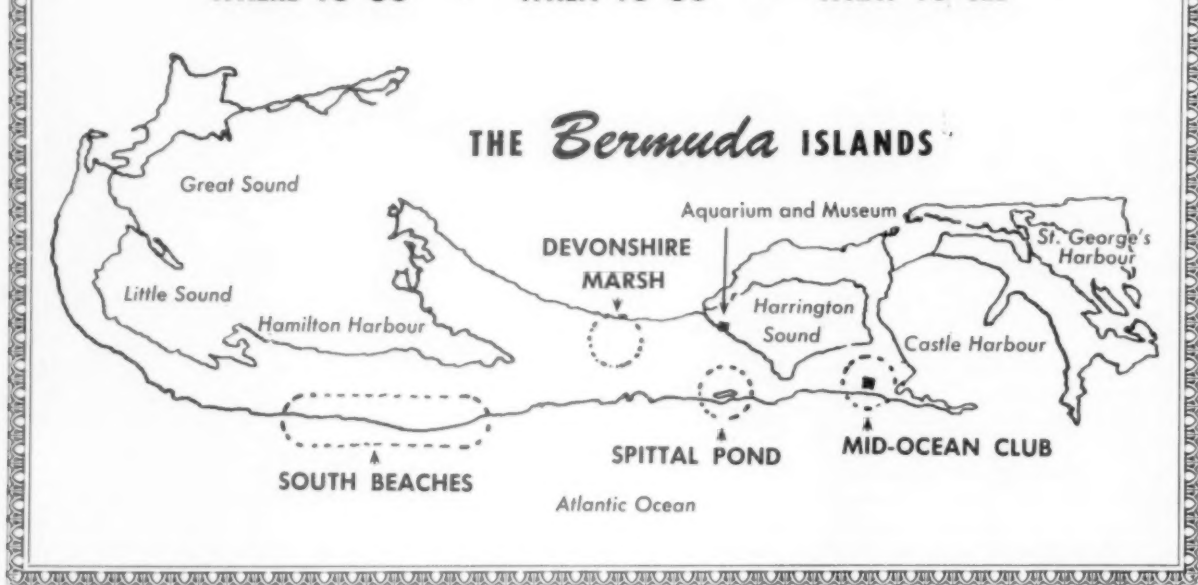
—THE END

"The male, like a phalarope, is said to do most of the brooding."
Photograph by H. K. Job.



BIRD FINDING WITH *Sewall Pettingill*

WHERE TO GO • WHEN TO GO • WHAT TO SEE



NOT long ago Mrs. Pettingill and I spent five pleasurable November days in Bermuda. Besides giving an Audubon Screen Tour lecture before the Bermuda Audubon Society, enjoying the hospitality of our hosts, and seeing tourist attractions, we explored the principal bird-finding areas. All were rewarding but, as I shall explain presently, bird-life in this well-known vacation spot contains few elements new to Americans. The charm of bird finding here is in meeting familiar species in an exotic setting—much like meeting old friends from Indiana in Paris.

Not one island but a group of well over 100 sandstone-coral islands and islets, Bermuda is actually a tiny archipelago some 20 miles in length (east-west) with a total land area of about 22 square miles. A large proportion of its habitable surface is divided among seven large islands, all connected by bridges and causeways.

Bermuda's geographical position, in the warm North Atlantic Drift 568 miles due east of Cape Hatteras, North Carolina, gives it a pleasant, equable climate. Rainfall, averaging about 50 inches annually, is evenly distributed throughout the year; so

there is no rainy season. Cold or hot weather is most unusual as year-round temperatures generally range between 64 and 80 degrees.

CHANGES THROUGH HUMAN OCCUPATION

In the three-and-a-half centuries since the archipelago's discovery, possession, and later settlement by the British, its physical surface has been radically modified. Now, with a human population of nearly 50,000, there are few extensive areas not disturbed by homes, resorts, business establishments, military bases, parks, and gardens. Recently the few remaining stands of cedar were killed by an armored scale (*Carulaspis minima*), an insect whose feeding caused their complete defoliation.

Oceanic birds of numerous species nested abundantly in Bermuda at the time of its discovery, but most disappeared with human settlement a century later. The yellow-billed tropic-bird is the only oceanic species breeding commonly in Bermuda today, while the Audubon's shearwater may possibly be represented by as many as 100 pairs and the common tern by fewer than 10 pairs. A Bermudian gadfly petrel called the

cahow (*Pterodroma cahow*), long thought to be extinct, was recently rediscovered nesting, though not in encouraging numbers.*

PLANT AND ANIMAL LIFE

Biologically, Bermuda is distinctly North American, a fact to be expected in view of its proximity to this continent. The archipelago's native flora, while eclipsed by countless introductions from all parts of the world, comes mostly from southeastern United States and from the West Indies. Too far removed from North America to acquire reptilian and mammalian faunas, Bermuda has a few itinerant North American water and land birds which already have produced resident populations. Just which species were already established when man first reached Bermuda and which arrived with man's assistance is a moot question. In any event, the species currently breeding regularly are 10 in all, as follows: bob-white (probably introduced and rare); ground dove; common crow; catbird; eastern bluebird; white-eyed vireo; house sparrow (un-

* See the article, "New Light on the Cahow, *Pterodroma cahow*," by R. C. Murphy and Louis S. Mowbray, "The Auk," July 1951, pp. 266-280. —The Editor

questionably introduced); cardinal; and European goldfinch (unquestionably introduced). Other North American species that have been known to nest include the great blue heron, green heron, and American coot. A hawk, possibly a red-tailed, once resided in Bermuda, but has long since been extirpated.

Bermuda's resident bird population is vastly augmented, especially in the fall and winter, by the appearance of North American migrants. Thus Bermudian bird watchers boast a list of over 250 species and, each year, fully expect to see at least 100 species, of which 60 will be common. The variety of water, shore, and land birds is almost identical with what one would find by way of non-residents in coastal Virginia and North Carolina during the same seasons. Although some of the water and shore birds may reach Bermuda by direct flight, in all probability most species arrive by accident, having been driven from their habitual migration routes through eastern United States by westerly (offshore) winds.

BERMUDA FROM THE AIR

On seeing Bermuda from our plane window, as we circled prior to landing at the airport, I began to wonder: where is there room for wild birds? As far as we could see across the islands there were white-roofed buildings, roadways, lawns, and gardens; beaches and rocky shores seemed everywhere encroached upon. Indeed the promise of good bird-finding spots was dim, but as we were soon to learn there are still some areas suitable for wild birds. Among them are a few farmlands (for grazing and various crops), marshes, ponds, brushy tracts, and woodlots (now marred by the gaunt stubs of dead cedars), together with mangrove swamps and cliffs—the least modified of all avian habitats.

Once we had landed and were outside the airport, on our way to Paget, we were immediately impressed with the snugness of our surroundings: the narrow roads with walls of lush vegetation, beyond which were many dwellings partially hidden by trees and hedges. On every hand there was cover for birds. In Paget, at the home of our delightful hosts, Stanley and Sybil Gascoigne, we were not long in meeting four common door-

yard birds amid thick stands of bamboo and other tropical plants. Two were the house sparrow and the cardinal; the other two were the white-eyed vireo and the catbird. The vireo, which is *Vireo griseus bermudianus* (a race peculiar to Bermuda), nests higher than the mainland forms; the catbird also nests higher on the average and builds a somewhat bulkier nest. The next day, as we traveled over the island, we continually saw the eastern bluebird and ground dove. These birds, as well as the vireo and catbird, were amazingly tame and far more numerous than I had ever found them on this continent. In the past there were times when bluebirds were so abundant that some pairs had to nest in the open, owing to lack of available holes.

At night, from the trees in the Gascoignes' yard, came the musical voices of tree frogs. Each call was a high-pitched, almost flute-like *kweeee* that was wholly pleasing to our ears. We failed to see a tree frog giving the sound, but it seems quite probable that the voices we heard were those of the whistling frog (*Eleutherodactylus martinicensis*) which has been introduced in Bermuda as it has in Jamaica.

VISIT TO NESTING ISLET OF THE CAHOW

A high point in our Bermuda sojourn was a boat trip with Louis S. Mowbray to an outlying rocky islet where the cahow nests. (The name and location of the islet cannot be revealed, lest the species be endangered by too many visitors.) We saw no sea birds along the way, but had we taken the trip between March and September we would have observed many yellow-billed tropicbirds, as they are then conspicuous features of the Bermuda seascape, frequenting all cliffs where they nest in holes and crevices. However, we noted several belted kingfishers on high rocks at the sea's edge and watched them diving for fish in salt water!

At our destination, which was a curiously eroded and broken limestone formation with a sparse plant cover, Mr. Mowbray showed us four cahow burrows and told us that he knew of nine more on nearby islets. There were fresh tracks in the loose soil at the entrance to one of the burrows—an indication that these ocean wanderers were already return-

ing at night for courtship. Young birds could be expected in these burrows from the last of February until late June. In order to prevent tropic-birds from crowding out the cahows, Mr. Mowbray would eventually place a baffle across each burrow entrance (after the cahows began to nest, and before the tropic-birds arrived). A baffle consists of a board with a hole in it large enough to admit a cahow but far too small for a tropic-bird. The cahow, however, will not go through the hole until its nesting drive is well developed, hence the reason why the baffles cannot be put in position too soon.

Mr. Mowbray is Curator of the Bermuda Aquarium and Museum. Situated on Harrington Sound, this institution is well worth a visit. In addition to its glass-fronted tanks containing fantastically colorful fish from local waters and excellent natural-history exhibits, there are many live birds (penguins, flamingos, ducks, parrots, and so on) in outdoor enclosures.

Among the bird-finding places that we visited on the Bermuda mainland (i.e., the seven large islands), the following are outstanding for their variety of non-resident species. All the places are indicated on maps which tourists usually receive on arrival, and all may be easily reached by hiring a taxi.

SPITTAL POND BIRD SANCTUARY

Spittal Pond Bird Sanctuary, in the town of Smiths, is reached from South Road by turning south just east of St. Mark's Church. Now designated by the Government as an official sanctuary under the administration of the Bermuda Historical Monuments Trust, this area embraces wild land, cliffs (where tropicbirds nest), and the pond itself—a natural body of brackish water and mud flat. The sanctuary is notable for its water birds and ducks from October through March. Some of the species that may be seen commonly are the pied-billed grebe, great blue heron, American egret, little blue heron (the commonest heron in Bermuda), baldpate, green-winged and blue-winged teal, and American coot (as many as 150 have been seen at one time). Semipalmated sandpipers are often abundant here from July through September; spotted and solitary sand-

pipers are common in the fall; and greater and lesser yellow-legs stay in small numbers through the winter.

MID-OCEAN CLUB

Mid-Ocean Club, in Tucker's Town, is reached from South Road. Here, midway along the golf course, is a small pond with marshy edges attractive to resident Florida gallinules, visiting grebes, herons, and a few ducks. Nearby are shrubby hillsides, woodlots, and a dumping area where one may expect such residents as the ground dove, common crow, catbird, eastern bluebird, and European goldfinch; also (from October through March) a rich variety of transient and/or winter-resident, small, land birds that usually include the yellow-billed cuckoo, common (yellow-bellied) sapsucker, cedar waxwing, red-eyed vireo, black-and-white warbler, myrtle warbler, black-poll warbler, palm warbler (quite common), northern and Louisiana water-thrushes, American redstart (probably the commonest warbler), and Baltimore oriole. On the golf course killdeer, golden and black-bellied plovers, and other shore birds are likely to be present, especially from July through September.

DEVONSHIRE MARSH

Devonshire Marsh, in Devonshire, is reached from Middle Road by going north on Orange Valley Road to Jubilee Road, east on Jubilee Road to Vesey Street, and east on Vesey Street, which eventually joins Middle Road. Close to the south side of Jubilee Road and Vesey Street, the marsh is good for winter-resident herons (eight species, including the green heron, black-crowned night heron, American bittern, and least bittern), sora rail, Wilson's snipe, and yellow-throat.

THE SOUTH BEACHES

The South Beaches, from Grape Bay in Paget to Warwick Long Bay in Warwick are reached from South Road. Practically all the transient shore birds that are common on the New Jersey, Virginia, and North Carolina beaches in the late summer and early fall occur on these beaches in the same season, though in much smaller numbers. The species most likely to be seen at any time are the ruddy turnstone and pectoral sandpiper.

BERMUDA AUDUBON SOCIETY FIELD TRIPS

It is well to remember, when you are in Bermuda, that the Bermuda Audubon Society, besides sponsoring Screen Tours, conducts many field trips. You may contact the organization through Mr. Mowbray at the Aquarium and Museum. Before going to Bermuda, you will find very instructive and illuminating an ar-

ticle, "*The Breeding Birds of Bermuda*," by W. R. P. Bourne, published in the January 1957, issue of *The Ibis*. In preparing this column I consulted this article several times, and I also relied considerably on information generously given me by Miss Patricia Browne, an enthusiastic and able Bermudian bird watcher, who guided us to a number of bird-finding areas. —THE END

BIRD'S-EYE VIEW—Continued from Page 201

It is usually safer to claim that one finished one's own route unexpectedly early and to imply that the rival understandably needed help in covering territory assigned to him.

III The Birdsmen at Meetings

The great test of the birdsmen comes when he takes part in an ornithological discussion. Silence and a billowing pipe between them make a useful build-up and literal smoke-screen, out of which, when the speaker makes any assertion not backed by a mass of evidence, should be jerked in a tone indicating apparent sympathy overridden by devotion to truth (admittedly not very easy) and with equal emphasis on each monosyllable: "Do we know that?"

This line is guaranteed to throw all but the toughest out of their stride at the first application, and may even bring their contribution to an early and humiliating end.

In the event of a convincing reply, however, the birdsmen must make a quick decision. If he feels that his opponent really knows his subject, he can still sign off without losing face by saying: "Exactly, thanks very much, but I wasn't quite sure if everyone (inclusive-exclusive wave of the pipe-stem round the gathering) here knew of Blobsch's work on substratal stimuli." But if he decides a counterbluff is being attempted, then he should simply nod and try the line again at the next opportunity. If a third use of the gambit is successfully met, there is nothing for it but to have trouble with the pipe until interest is focused elsewhere.

Whenever a program of research reports is presented at a meeting, the astute birdsmen will endeavor to obtain advance knowledge of the titles to be presented. A half hour's review of the abstracting section of *Bird-banding* can be counted upon

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to arm his memory with a few European references that the speaker is sure to have overlooked. Hungarian references are most effective when alternated with the Finnish.

Should the birdsman ever be trapped for prestige reasons into speaking himself, he must—short of actually mastering his subject—rely on two things: first, immediate acknowledgment of his indebtedness to the work of his most likely critics; and secondly, a rigid refusal to come to any conclusions whatever. The

work should always be in progress, as indicated by such a parry and riposte to a questioner: "That's just what I'd like to know: perhaps by this time next year, if all goes well, we'll have some more data to help us."

In this way the adept birdsman may succeed in dining out for two or three years as the guest of ornithological societies up and down the country before equipping himself with a new, and perpetually unfinished, problem. —THE END

Company Abandons Agricultural Insecticides

"The following announcement by the Thompson Chemicals Corporation, Los Angeles and St. Louis, is reproduced here because of its significance. Dated May 1, 1957, the announcement was signed by Wm. T. Thompson, president of the company:

"We have decided to withdraw entirely from the production, distribution, and research of the *presently known* AGRICULTURAL INSECTICIDES.

"A 12-year study has convinced us that the currently known and used broad spectrum insecticides and their wide-scale application to agricultural crops—although giving temporary control and temporarily increased yields—are at best palliative, and perhaps will prove dangerous and uneconomic in the long run.

"The growing number of insect pests of economic importance that are becoming resistant to presently used agricultural insecticides demonstrates a serious inherent danger in the wide-scale use. The imbalance of the fauna population caused by the destruction of the natural predators and parasites (thus allowing the uninhibited development of the insect pest) is further proof to us of the unsoundness of the current chemical insecticides. This cannot only result in rapid and dynamic developments of the insect pest from the few not controlled by the application, but can easily cause heretofore unimportant insects to increase to the status of economic pests, once the predator-parasite balance has been upset.

"The ingestion of presently employed insecticide residues by humans and other warm-blooded animals is a correlative problem of a *highly serious* nature. The industrial hazards inherent in the indiscriminate, wide-scale application of chemicals of such highly toxic nature also causes concern.

"Our study convinces us that any sound approach to the control of agricultural insect pests must be sought in chemical mechanisms that are selective between the insect *pest* and the *bene-*

ficial insects. The study of such mechanisms, both of physiologically and ecologically selective natures, we feel, must be the primary concern of research.

"We intend to hereafter devote our research energies in the field of insect control to the exploration of selective insecticidal chemicals. It is our hope that in this field we may be able, as time goes on, to create some worth while contributions to the agricultural control of insect pests and subsequent yield increases of a more permanent nature. . . ."—*Conservation News*, June 1, 1957, National Wildlife Federation, Washington, D.C.

AUDUBON CONVENTION, 1957

The 53rd Annual Convention of the National Audubon Society, with its branches and affiliated societies, will be held in New York City, November 9 to 12, inclusive. Headquarters will be at Audubon House, 1130 Fifth Avenue. Members and member-groups should receive the convention program about the middle of October. The convention will end with the annual dinner on Tuesday evening, November 12.

NOMINATIONS

The official Nominating Committee for directors of the National Audubon Society, consists this year of Mr. R. Gordon Wasson (Chairman), Mr. Charles G. Woodbury, and Mr. Wheeler McMillen. If any member wishes to submit suggestions to the committee, a letter may be directed to Mr. R. Gordon Wasson at 23 Wall Street, New York City, N. Y.

ARE WARBLERS DECREASING?

Continued from page 213

easy feeling that most of the migrants in his region have passed at night and that in the morning he sees only the small sample which fortuitously happens to come within his range.

The Influence of Cold Fronts on Fall Migration

The other problem of the mainland observer—the weather—influences us, too. Nowhere in the Northeast is bird migration observable as a continuous movement. From the very first trickle in early August until the big migration days in September and October, birds arrive with every cold wave. On Nantucket this means they come with a wind out of the north, northwest, or the northeast. When the wind is out of the south, with rare exceptions, we have little if any, bird migration. The strength of the cold fronts and the interval between them is also important. Relatively long intervals between the arrival of cold fronts—eight days or more—allow the accumulation of birds to the north of us, with sufficient internal motivation to begin their migration. All that is needed, apparently, to start them on their way is the combination of weather factors attending a cold front, or perhaps just one of these factors—lowered (colder) temperatures, higher barometric pressure, and northerly winds.

A cold front after a prolonged period of southerly winds, brings an influx of birds like the spilling of waters over a dam. On Nantucket we do not see those birds, stimulated to migrate by the cold front, until six or eight hours after the leading edge of the cold front has passed us. Then—their arrival is dramatic. Thickets that were empty and lifeless are suddenly filled with birds. A *strong* cold front may cause birds to arrive and depart over a period of two or three days. A change around to southerly winds quickly shuts off this flow; however, later in October, we see less coordination of the flights of birds with cold fronts, and may get large-scale migrations on balmy days with gentle southwesterly winds.

Continued on page 235

Songbirds of America: In Color, Sound, and Story

Recorded, photographed, and written by world-famous Cornell University authorities, Dr. Arthur A. Allen and Dr. Peter P. Kellogg, with a Foreword by Roger Tory Peterson.

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Attracting Birds



Building Your Nest-Boxes to Last Longer

(Part I)

By C. Paul Denckla

IT has been my experience that many bird-boxes that either are bought or made at home, omit several principles of sound building construction, which allow them to deteriorate in three or four seasons. At the end of this time, they either leak, or the wood has swollen or split, and they have generally become inadequate for the protection of young birds while they are being reared. Of course, to some people it is always pleasure and possibly fun to replace worn-out birdhouses, but by using a few basic fundamentals in birdhouse construction, such as providing for the proper run-off of rain water and weather-drip from the boxes, their life can be more than doubled.

Why Nesting Boxes Deteriorate

In the first place, it has been my experience with nest-boxes which I bought that the section of these boxes that deteriorates first, is not the roof, as one might expect, but the bottom of the box. Generally most roofs have a certain amount of slant, or pitch, to carry off most of the rain. But because the bottoms of most bird-boxes are flush with the upright sides, rain water is carried to the bottom of the box by capillary attraction, and from there it drips off slowly to the ground beneath. In this interval, the bottom of the box has a tendency to absorb some of this water due to the large cross-section offered by it for holding the water. By simply extending downward, sides, back, and front of the boxes about one-half inch below the bottom section, the

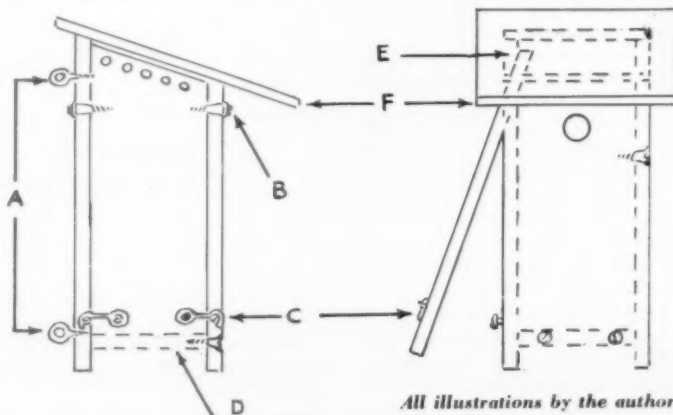
Turn to page 230

Illustration #1. Basic Design of Bird Box.

- A. Eye screws. Set in triangular pattern; one at top, two at either side near bottom.
- B. Round-head brass screws over brass thimbles. Hinge point for side opening.
- C. Screws and hooks for keeping side closed.
- D. Bottom, 1/2-inch above sides and back members.

- E. Top of side that opens, rounded off at top to allow free opening under roof.
- F. One-half-inch thick exterior plywood roof member covered with copper.

All wood, except roof, one-inch thick (actual 3/4-inch) surfaced and treated with wood preservative inside and out.



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water does not saturate the bottom, but drips, or falls, from the narrow edges of the side-pieces. (See illustration #1.) I have found that this simple change in next-box construction greatly prolongs the life of the box, and that premature rotting of the bottom is thus avoided.

Protecting the Roof of the Nest-box

Roofs of boxes also rot, or deteriorate, without more protection than that offered by paint or wood preservatives. I strongly recommend that sheet-copper be used to cover the roof. Copper can easily be formed to a tight fit around the wooden roof. I usually use a 16-oz. copper sheet, which most roofers have in stock, but as light as 10 oz. would be adequate. Copper is expensive, but it is well worth considering. The corners should be notched and pressed neatly down over the edges of the roof, then soldered water-tight. (See illustration #2.) The sides, front, and back

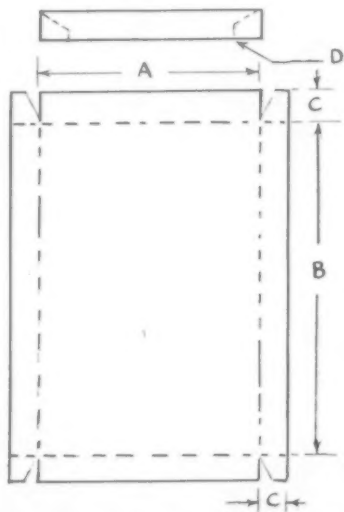


Illustration #2. Layout of copper cover for ½-thick exterior plywood roof. All bends of the copper (indicated by broken lines) should be made at an angle of 90 degrees. A and B indicate the dimensions of the roof (length and width); C should be ½ of an inch, if the roof thickness is ½ an inch; at D, solder the point where the copper folds to make the roof watertight on the inside.

so formed by the copper roof-covering, should extend ¼-inch to ½-inch below the roof to allow for proper rain drip. If the copper is cut and formed so that the sides of it are flush with the bottom edge of the wooden roof, water will soon find its way under the copper and rot the wood. This is the same principle that I have explained for the bottom section. Water must be carried off quickly and not be allowed to remain either on the bottom, or the roof sections, if a long-lasting box is desired.

Ventilation

In ventilating my boxes, I have included drilled, ventilating holes in the top section of both sides of the box. (See illustration #3). These holes are drilled on a slight angle, with the outside end of the hole lower than the inner end to prevent rain from entering the box at these points. In the bottoms



Illustration #3. Note the ventilating holes in the side of the box, near the top.

of the larger boxes, I also drill four or five ¾-inch diameter ventilating holes (in the pattern of a dice) in the bottom of the box. Then in order to retain sawdust or other inviting nesting material for the birds, I cover these holes on the inside with aluminum fly screening; this allows for the ventilation specified, and retains the nesting material on the inside of the box.

Assembling the Nest-box

In assembling all boxes I recommend the use of wood-screws, preferably brass, and in sizes #8 or #10. Holes for the screws should be slightly counter-sunk and then the heads of the screws puttied over. Nails are useless in bird-boxes as the expansion and contraction of the wood (any wood) by exposure soon leaves openings in all sections which quickly promote decay and rot. In my opinion a box should be tight in every section, if it is required to be long-lasting. My preference in wood is cypress, although white pine (clear) and redwood are excellent. For all roofs of boxes or feeders, I recommend ½-inch thick exterior plywood. Holes should first be drilled for screws in all these woods as they have a tendency to split. Surfaced wood is preferable although the inside of the walls and bottom can be rough. Never use wood that is not planed or surfaced on the outside of boxes. Before attaching the sections of the boxes together, liberally apply a good wood preservative to them. Upon completion of the box, another coat of wood preservative should be used, inside and out. After this preservative has soaked into the wood, apply a coat of wood oil-stain to the outside only. This stain should then be

wiped off before it has completely dried which leaves a color to the wood of the box, and gives it a more natural appearance. Finally to the outside I apply two coats of Valspar varnish or Varoil.



Illustration #4. The side of the flicker nest-box can be opened for inspection by hinging one side of the box. (See Illustration #1 for method of hinging.)



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Turn to next Page

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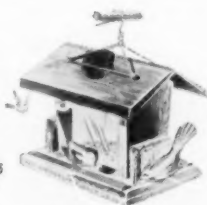
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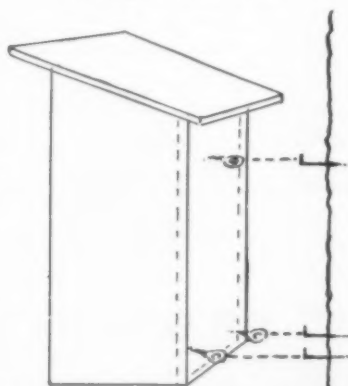
screws that they are at exact right angles to the front and back, and in line with each other, as otherwise the side that is being opened will bind. At the bottom and at either side of this hinged section, two flat hooks and screws are positioned for keeping it shut. At the top of this hinged door, it is necessary to round off the outside edge to allow entering under the roof when it is being opened.

Hanging the Nest-box

Now for the erection of boxes. In this connection I strongly advise against nailing a box to a tree or branch. I believe the roofs of boxes should extend slightly beyond the backs, and due to this overhang of the roof, a filler block would have to be used to align the box in proper position. To me this would be cumbersome and inadequate. More important, however, is the fact that if boxes are placed with their backs directly against the tree trunk or branch, water coming down the trunk soon rots out the back section of the box, and in a season or two you will probably find your box on the ground. Also, trees grow, and if you nail or screw your box tightly to a tree this season, next season after the tree's normal growth, those fastening nails become tighter. During its progressive growth the tree has a tendency to push the box away from its trunk a little more each year. On a growing tree it is doubtful to me if your box will remain on the tree by its original fastening medium longer than three years, if this method of attachment is

It has been my experience that the best and simplest means of attaching bird-boxes to trees is by using "L" screws, in the tree, and eye screws (which fit over the "L" screws) on the back of the boxes. (See illustrations #5 and #6.) Both these types of screws used

Illustration #5. L screws and eye-hooks to hang box from a tree.



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should be brass, and can usually be obtained at some of the larger hardware stores. The "L" screws should be at least 4 inches long, preferably 6 inches. Start by placing the top or center "L" screw into the tree first. Hang the box by the top-center eye screw onto this "L" screw. Then adjust the box to its proper position and alignment. Note where the bottom eye screws on the box would come in a straight, and in a level, line to the tree. Now place the bottom "L" screws in the tree at these points. If you are off on your calculation, the "L" screws can easily be bent in any direction after attaching to the tree so that they line up with the eye screws on the box.



Illustration #6. One of the author's chickadee nest-boxes hung up by L screws and eye-hooks.

Of some 20 boxes that I have erected in this manner, not one so far has come loose or been blown down. I might add that they have withstood a hurricane and a small "twister" that went through my place recently. Boxes mounted in this way can also be conveniently removed for re-varnishing or painting or be removed to another location. The accumulated rainwater coming down the tree trunk never is in contact with the box, and the box will remain in its original setting or location until the tree has grown to the outer end of the "L" screw. In most cases this will be about 10 years, if the "L" screws are 6 inches long and enter the tree slightly beyond the screw section.

—To be continued

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ARE WARBLERS DECREASING?

Continued from Page 227

Distinctiveness of Migration on Nantucket Compared to Mainland

Migration on the mainland is governed by much the same weather factors and in the same way. But movements there are not so neatly defined. Local or summer-resident birds complicate the picture. For instance, on Nantucket, we have only three or four nesting warblers and none of these is numerous. We have no difficulty sorting these out from transients reaching the island from the north. But mainland observers not only have the confusing element of their own residents to contend with, but the residue of earlier waves, birds still on the move but not making the longer hops characteristic of the cold wave. Water-barriers isolate Nantucket from such short-distance flyers. The migratory impetus must be strong in birds or they will not make over-the-water flights, however short these over-the-water flights may be.

Water-barriers also seem to have an important role in designating what species of migrants we get on Nantucket, and in what numbers. We have to be careful not to compare our migration too closely with that on the mainland. The composition of our flights are distinctively insular. Some species—Cape May and bay-breasted warbler—are relatively much more abundant on Nantucket than the mainland. Others—phoebe and chipping sparrow—are much less so. Of unusual interest to us is a relatively high ratio of birds we get that are outside their normal range. Banding has provided us with some definite figures.

One out of every 62 birds we have banded so far has proved to be a bird outside its normal range. We have had 44 strays in 2,700 birds that we banded in 15 months. These ranged from the yellow-breasted chat to the yellow-headed blackbird and the blue grosbeak. Compare this ratio to that obtained by Raymond J. Middleton, who in banding at an inland locality (Norristown, Pennsylvania) over a period of 28 years has had only two strays, both of which were western juncos. His ratio is one stray in every 21,500 birds banded! (To be continued)

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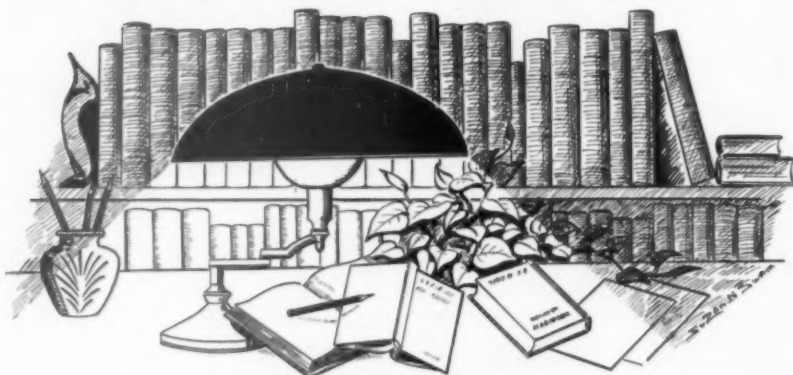
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BOOK NOTES



By Amy Clampitt, Librarian, Audubon House

JOHN AND WILLIAM BARTRAM'S AMERICA:

Selections from the Writings of the Philadelphia Naturalists

Edited by Helen Gere Cruickshank, with a foreword by B. Bartram Cadbury, Devin-Adair, New York, 1957. 8¾ x 5½ in., 418 pp. Illustrated. Indexed. \$5.00.

John Bartram was a sturdy, God-fearing, plant-loving Quaker, a contemporary of Linnaeus, Catesby, and Benjamin Franklin, with all of whom he had correspondence. Most of his writing was in letter form, in which he set down what he saw, simply but often with great effectiveness: his description of an Indian village is, in its homely realism, one of the best anywhere. His son William was an equally gifted naturalist, but he was an artist as well, and above all he was a romantic. Coleridge, among others, promptly discovered in William Bartram's "Travels" the imagery and the notion of the New World precisely suited to his own fantastic imagination. The younger Bartram saw sublimity where his father discovered facts; William Bartram's work abounds in majestic accounts of thunderstorms; the Indians with whom he lived were to him not only noble, but amiable, graceful, and engaging; he described the sandhill cranes as "seraphic," and admired the rattlesnake; the life-cycle of an insect could send him into rhapsodies:

"Solemnly and slowly move onward, to the river's shore, the rustling clouds of the Ephemera (Mayflies). How awful the procession! Innumerable millions of winged beings voluntarily verge on to destruction, to the brink of the grave . . . But as if insensible of their danger, gay and tranquil, each meets his beloved mate in the still air, inimitably bedecked in their new nuptial robes . . ."

Mrs. Cruickshank is admirably qualified to edit such a collection, and the

book has been handsomely produced, with drawings by Francis Lee Jaques and several examples of William Bartram's work as an artist.

OWYHEE:

The Life of a Northern Desert

By Earl J. Larrison, Caxton Printers, Caldwell, Idaho, 1957. 8½ x 5½ in., 357 pp. Illustrated. Indexed. \$5.00.

Owyhee is a county in the southwest corner of Idaho—a huge area of kangaroo rats and pocket gophers, ghost towns, Basque sheep-herders, cloudbursts and 120 degree temperatures. The author of this book about it is a zoologist at the University of Idaho and co-author of two studies on a similar plan—one on Pilchuk in the Cascade Range, the other on Union Bay, a marsh within the limits of Seattle. He begins with the wildlife, but by no means leaves off there: old newspaper items, the gory doings inside a range corral, a discussion of overgrazing, even camp menus and the remarks of a stray female tourist, along with a vast amount of geological, meteorological, herpetological, and other data, find their way into Mr. Larrison's account of just what Owyhee is like. In form the book is narrative, in manner breezy, offhand, and vivid; and Alice's query about the use of a book without pictures or conversations has been taken entirely to heart. The former—including a frontispiece in color—are the work of Don Fritts; the latter should make agreeable reading for anyone even remotely interested in deserts.

COUNTRY YEAR:

A Journal of the Seasons At Possum Trot Farm

By Leonard Hall, Harper Brothers, New York, 1957. 8½ x 5½ in., 208 pp. Illustrated. \$3.50.

By profession a farmer, Mr. Hall is a writer, naturalist, and Audubon Screen Tour lecturer in his spare time. Where

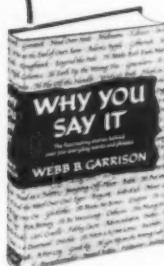
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the spare time comes from must, to city-dwellers forever in a hurry, remain a mystery; and yet greater mystery is the philosophic calm with which this chronicle is set down. A great deal happens in this Ozark valley; none of it is frivolous, and some things—drought, above all—are extremely serious; but in recording even the worst Mr. Hall never exaggerates, never dramatizes or writes for effect. Some of his best pages concern the animals, wild and domestic, that go to make up the populace of Possum Trot Farm—particularly the cows. Mr. Hall is anthropomorphic about cows—he admits it frankly—and this reviewer, for one, is glad to have it so.

READING THE LANDSCAPE:

An Adventure in Ecology

By **May Theilgaard Watts**, *The Macmillan Company*, New York, 1957. 8½ x 5½ in., 230 pp. Illustrated. Indexed. \$4.75.

Plant succession is a complicated and, to a non-ecologist, rather unpromising subject—hard to understand, harder still to put into plain English, and to make entertaining (one would have supposed) quite impossible. But that is what Mrs. Watts makes it in this ingenious little book. Delighting in complicatedness, she also makes it clear. The genealogies of forests, prairies, quaking bogs, canyons, and islands, as she writes of them, not only go to make history, they are history; and one cannot help sharing her enthusiasm. Her style is always graceful, now and then rather arch, and often funny; and her alert ear can lead to such an excursion as this: "Huddled there, listening to the hailstones spitting, bouncing, rattling, off my raincoat, and watching them bouncing off the gray-green cushion plants, I thought how hard, how stony, how spitting, was the vocabulary of a mountaintop. 'Rock, cirque, tor, peak, scree, tarn, tundra, alp, scarp . . .'"



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That might have come from a poet's notebook; and there is a whole final chapter, called "The Stylish House, or Fashions as an Ecological Factor," which might have come from the pen of a satiric novelist. Beginning in 1856 with Jonathan and Patience, who had six children, David, John, Paul, Daniel, Ruth, and Rachel, and a dog named Rover, it traces the vicissitudes of gardening and interior decoration down to the era of Kay and Don, who "have only one child, named Sharon. But they have two boxer dogs named Stockwell Stillwater Hamlet and Stockwell Stillwater Ophelia. Sharon is growing up. She will no doubt have several children, probably four. The style in size of family has changed just lately." Anybody who has ever gardened, or even tried to raise a philodendron—or a family—will find something in this chapter to laugh about.

MR. AUDUBON'S LUCY

By Lucy Kennedy, Crown Publishers,
New York, 1957. 8½ x 5½ in., 343
pp. \$3.95.

With feminine shrewdness, as well as a storyteller's craft, the author of this biographical novel shows the gentle but strong-minded Lucy Bakewell falling in love with Audubon by hearsay, long before they actually meet. We share her heroine's suspense: what is he really like, this dashing neighbor in the velvet coat, who excels at all the manly arts but who never comes to call? To the Audubon who finally does appear, some of Miss Kennedy's readers may take exception—which, of course, as readers of fiction they are entitled to do. But though she writes as a novelist and not as a biographer, it is clear that Miss Kennedy has done careful research into the available sources, and that she has used these as clues rather than mere pegs to hang a story on. She has a happy gift for bringing times and places alive: some of her most effective writing goes into the extremely entertaining chapters on the honeymoon journey aboard an Ohio River flatboat, and into her haunting evocation of the planter civilization at the edge of the Kentucky wilderness. She has a warm sense of character, and an imaginative tact which succeeds entirely in rescuing Lucy from that limbo of admirable, patient, and really rather tiresome wives to which she has been sentimentally consigned.

WINGS OF THE FOREST

By Dr. William J. Long, Doubleday and
Company, Garden City, N. Y., 1957.
8½ x 5½ in., 239 pp. Illustrated.
\$4.00.

If Dr. Long had been a scientist, he would no doubt have found himself classified with the animal psychologists

of the Lorenz-Tinbergen school. By profession he was not a scientist, he was a clergyman; but he was a bird-watcher all his life, and a writer of exceptional charm besides. Though he did not hesitate to draw conclusions—the essays in this book are full of them—they do not detract from the value of his observations. It was in his nature to regard any bird as a distinct individual, and to approach it with the patience and the open-minded curiosity which any scientist must have. In addition, he had an attribute which is not always part of the scientist's equipment; after he had watched a particular bird for a while, he got to be fond of it. One of the best pieces in this book concerns a bald eagle which he planned to take as a museum specimen, but for which he developed so great a respect that when the chance came he could not bring himself to take it. The real core of the case for birds of prey, and for wild birds in general, could hardly be put more persuasively.

WILDLIFE LAW ENFORCEMENT

By William F. Sigler, Wm. C. Brown
Company, Dubuque, Iowa, 1956. 8¾ x
5½ in., 318 pp. Illustrated. Indexed.
\$4.50.

Dr. Sigler is head of the Department of Wildlife Management at Utah State Agricultural College, and the originator of a course in wildlife law enforcement for which this book has been written as a text. It should, in addition, have considerable usefulness as a reference. After a short historical outline, it covers state and federal jurisdiction over wildlife, the rights of private citizens, the definition of violation, the qualifications and duties of enforcement officers, and procedures for the arrest and trial of violators. A number of cases are cited, and each of the federal wildlife laws has been summarized. The author has included a fairly extensive bibliography.

Answers to "Insects—Face to Face" (see p. 214)

Common Name of Insect	Family
1. Robber fly	(Diptera)
2. Black field cricket	(Orthoptera)
3. Honey bee	(Hymenoptera)
4. Carpenter ant	(")
5. Short-horned grasshopper	(Orthoptera)
6. Dragonfly	(Odonata)
7. Monarch butterfly ..	(Lepidoptera)
8. Horse fly	(Diptera)
9. Scorpionfly	(Mecoptera)
10. June beetle	(Coleoptera)
11. Damselfly	(Odonata)
12. Fishfly	(Neuroptera)
13. Lacewing	(")
14. White-faced hornet ..	(Hymenoptera)

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Your CHILDREN

By Shirley Miller

We don't want to alarm you, but already it's time to start your Christmas shopping! Not in bespangled department stores and plush gift marts, but rather along winding country roads, edged with Queen Anne's lace, in meadows bursting with milkweed pods and goldenrod, and in forests where acorns and locust pods are your quarry. Here's why. In this department, in the next issue of this magazine, Miss Katherine V. Macks, Assistant Professor of Science Education at Wayne State University in Detroit, is going to tell you and your children how to convert these treasures into unique and beautiful Christmas ornaments, and in order to be ready for her instructions, we urge you to gather the material you're going to need during these early fall days, before the weather has taken its toll. Miss Macks incorporates this instruction in her regular elementary science methods course for

potential teachers and she has generously consented to give you some of these secrets, too. She calls her ornaments "Beauty from the Wayside" and she sends you this preliminary message about the project.

"Christmas is a wonderful time of the year, full of secrets, shopping excursions and bustling preparations for the day. It is a time when the whole family can join together in making the holiday season something that is particularly theirs and one such activity is making Christmas ornaments from seed pods and other common plant materials. Their shapes are naturally graceful and by adding some paint, sparkle, and imagination, lovely results may be obtained. These plants are not rare or exotic, but rather they may be gathered from roadsides, fields, forests, and vacant lots. For instance, Queen Anne's lace is the basis for the most delightful angel you ever saw; an enchanting snowman may be made from acorn caps and goldenrod galls; and a fanciful bird is created from a goldenrod gall, swamp milkweed pods, pine cone willow gall and dogbane.

"Here are some suggestions for what to gather: ailanthus seeds, bladdernut, locust pods, box elder, dogbane, evening primrose, goldenrod galls (round), jimson weed, lilac seed pods, milkweed pods (both swamp and common),

mullein, oak apples, pine cone willow gall, Queen Anne's lace, the fruiting fronds of both ostrich and sensitive fern, sweet gum, teasel, wild cucumber, wild yam root, yucca. Many additions can be made to this list. Every section of the country will have some local plants that are of special charm.

"For best results, seed pods should be gathered when they are really ripe. Most of them are not satisfactory if collected when still green. Some fragile seed pods, such as swamp milkweed, should be gathered as soon as ripe, as autumn rain and wind will soon ruin them. Others, such as teasel and evening primrose, can be gathered far into the fall and winter. Before storing this material for use at Christmas-time, it is best to remove unwanted leaves and to clean out 'fly-away' seeds from such pods as milkweed and dogbane. Also clean all the material by dipping it up and down a few times in detergent suds then rinse in clear water and spread on newspaper to dry. Do not allow the material to soak for any length of time. When thoroughly dry, the material may be stored until the time arrives for making the ornaments."

So do take a shopping bag along with you on your fall field trips and start gathering these treasures from the wayside. Miss Macks will be back in the next issue to wave her magic wand.

A country roadside in September will yield treasures for Christmas ornaments. Photograph by Clifford Matteson.



LOOK FOLKS . . . It's time to start your AUDUBON JUNIOR CLUB



(Send to the National Audubon Society, 1130 Fifth Avenue, New York 28, N. Y., for a free illustrated folder)

Everything is ready for another year of fun in an Audubon Junior Club. The new material is here and is more exciting than ever. And we have a surprise for you. In addition to all the materials that are customarily sent these clubs, we are adding a new MONTHLY PROJECT SHEET of seasonal activities, which each leader will receive each month during the school year. Be sure and start your Club at once so you won't miss a single issue.

✦ This year each child in an Audubon Junior Club receives the new Explorer's Scrapbook, containing three new stories, entitled "Let's Explore our City," "Let's Explore the Seashore," and "Let's Explore the Prairie."

Each story is illustrated with colored pictures of birds, mammals and flowers found in each habitat, and each story has a full page outline drawing for hand coloring.

By reading how Tom and Sally carry on their own thrilling explorations of these various habitats, children are stimulated to do likewise, and this scrapbook is planned so that they may add to it all the things they learn and find in their own explorations.



✦ Also, each child receives the new Audubon Junior Club Button, depicting an American Egret, against a bright red background.



✦ The Club leaders also receive the club magazine, AUDUBON JUNIOR NEWS, which is published each fall and spring.



(The cost of a year's membership for each child is only 25c — and each leader receives her material free of charge. 10 or more children constitute a club)



✦ To help the Club leaders integrate this program with their own teaching and leadership curriculum, the new NATURE PROGRAM GUIDE is provided. This shows how the material adds zest and interest to elementary classroom subjects, including language arts, social studies, elementary science and creative arts. It also helps Scout, Camp Fire Girl and 4-H Club leaders use the material effectively in their own programs.



The Audubon Christmas Card For 1957



Cards measure 5" x 7",
envelopes included.
20¢ each, 10 for \$1.75,
25 and any amount over, 15¢ each.

Please add 25¢ postage and handling on all orders for Christmas Cards.

The Audubon Christmas Card for 1957 pictures two American Egrets in the Corkscrew Swamp Sanctuary in Florida. It is a reproduction of a painting drawn from life by John Henry Dick. The white birds poised on a branch above the soft yellowish-green of the Lettuce Lake illustrate the quiet beauty of the Sanctuary.

The Audubon Society owns and maintains this Sanctuary comprising 5,760 acres of virgin bald cypress, where many forms of wildlife, plants and nesting birds are protected.

From 1956 the charming Mallard Duck is available while it lasts, for 10¢ each. It depicts Mallards on a frozen pond by the English artist C. F. Tunnicliffe A.R.A., R.E.

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